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THE NEW YORK DENTAL JOURNAL.

JANUARY, 1861.

OUR FOURTH VOLUME.

WE desire to say a few words to our friends and subscribers in commencing this volume of the NEW YORK DENTAL JOURNAL. We have already so fully stated our plans and intentions with regard to this publication, that there remains little to say, except to make mention of some views and ideas which have occurred to us since our last issue.

And first we would state that hereafter the publisher of the JOURNAL will assume in part the charge of its editorial department.

Next, we wish to refer to an article in our last number, in which we called the attention of our readers to the fact of many subscriptions being overdue, and stated that we should hereafter only send the JOURNAL to those who settled their accounts before January 1st, 1861. We are happy to say that this notice has been responded to promptly by many; to those who have not so responded, we wish to say that immediate attention will insure the validity of their subscriptions.

Any person can obtain a sample number of the JOURNAL *gratis*, by applying to us.

The idea which we carried out in our last issue, of a series of *prize essays*, has been received with universal favor, and we are constantly in receipt of able and interesting communications; those which we publish in our present number may be taken as evidence of the truth of our assertion that there was talent enough in the profession, only needing to be drawn out. Our next prizes are offered for essays upon the following subjects:—

1st. *The treatment of diseased gums.*

First prize, Harris's Dictionary of Medicine and Dental Surgery.

Second prize, Richardson's Mechanical Dentistry.

2d. *The selection and arrangement of teeth.*

First prize, a selected assortment of teeth, manufactured by W. B. Roberts, worth fifteen dollars.

Second prize, a selected assortment of teeth, worth ten dollars.

These subjects are both of the greatest importance, to the public as well as to the profession, and we hope to call forth expressions of opinion, and to eliminate ideas, which shall be as instructive to one as they will be creditable to the other.

We have nothing further to say at present in this connection, except to return our thanks for the kindness with which we have been supported during the past year, and to wish all our friends a very "happy new year," with the assurance that with each issue of the JOURNAL we shall seek to deserve their favors and to add renewed interest to our labors.

Continued from page 140, Vol. III., No. 3.

ANÆSTHESIA; OR, ETHER AND CHLOROFORM AS THEY OUGHT TO BE USED BY THE DENTAL PROFESSION.

By L. D. Radzinsky, M.D.

Now, having made a few preliminary remarks, let us consider what are those symptoms which should deter us from the administration of anæsthetics; they are far more numerous and serious in their effects than is generally supposed.

As anæsthetic agents exhibit themselves by their effects upon the brain and mind, we should consider, first, in what symptoms, or predispositions to disease of the brain, we must abstain from the use of them.

So the same with the heart and lungs, these several organs being implicated during the phenomena of anæsthesia, therefore we will have to make three different physical examinations of our patient before allowing ourselves to exhibit such a powerful agent.

I hope I may be excused by my readers the repetition of these different symptoms, which have already been described by abler writers than I.

I will therefore begin by examining the symptoms, and present the appearances of a person in whom we might suspect a predisposition to affections of the brain; the first, and indeed the most serious of all, and the one which most merits our attention is "apoplexy."

1st. We can generally distinguish several kinds of apoplexy; one which kills suddenly, and which for this reason has been denominated by French writers as "foudroyante," that is, killing as if by lightning.

2d. Another, which is equally mortal, but only in a space of time more or less remote from the first attack, the duration of which may be prolonged several days, rarely several weeks.

3d. A third, which is not sufficiently powerful to produce death, provided that the patient receives assistance at an early time from the first onset of the disease; but leaves disorganizations in the encephalon, which only awaits a second attack, and very rarely a third one, to destroy life.

4th. A fourth one, very slight, which is generally designated as a rush of blood to the head, which the affected person can sustain a number of times without succumbing to it, and which gives the physician the hope of curing his patient.

5th. A fifth, more or less intense, but always followed by paralysis; often the attack is not renewed; but the paralysis which is the result of it will remain for a number of years, sometimes for the remainder of the life of the sufferer.

6th. A sixth one, which is well characterized, and sufficiently strong sometimes to produce death, does not leave any paralysis, nor any lesion, either in the brain or in the nervous system, and has no recurrence.

Now, having seen that these different kinds of apoplexy exist, we will observe that I have described shades and degrees only, which, notwithstanding their different intensity, constitute only one disease. Besides these already named, we distinguish three more.

1st. A nervous.

2d. A sanguineous.

3d. A serous.

But it is generally extremely difficult to the physician to distinguish, during the life of his patient, whether it is a nervous, serous, or sanguineous apoplexy, because, generally, the causes do not differ and the symptoms are the same; the prognosis and the treatment are also similar.

I will here beg my readers to excuse me if I go into details more properly belonging to general medicine than dental surgery, but I think it of sufficient importance, in their relation to my subject, to make it necessary for me to admit them. Therefore I will continue with the predisposing causes of apoplexy.

1. We can classify among the predisposing causes a temperament eminently sanguine or nervous, sometimes nervo-sanguine and lymphatico-nervous.

2. A constitution in which the head is very large relatively to the trunk, and the neck is very short.

3. Excesses in the regimen, from which result sanguineous plethora and excessive obesity.

4. The abuse of wine and alcoholic drinks, and drunkenness often repeated.

5. Venereal excesses.

6. Protracted studies and a want of proper exercise.

7. Violent passions, excitable disposition, and frequent fits of anger.

8. Griefs continued for a long time, etc.

But, nevertheless, we see sometimes persons attacked by apoplexy whose physique is spare and thin, with long necks, very sober withal, without excesses, who have but moderate passions, and are of a sweet disposition. Besides these causes there are others which we will denominate occasional or accidental causes.

OCCASIONAL OR ACCIDENTAL CAUSES.

1st. The occasional determining causes of apoplexy are, blows upon the head, or wounds received by that organ, falls upon the sacrum and the concussion which is the result of such an accident.

2d. Fits of grief, which are already a predisposing cause.

3d. Extraordinary efforts, beyond the strength of the individual.

4th. Lightning, and other electrical commotions and atmospheric disturbances.

5th. Sudden immersion in cold water.

A great many causes, apparently trivial in their effects, can produce this terrible disease, but it is here unnecessary to enumerate any more. Let it suffice to say, that persons of an apoplectic tendency have been exposed to all these predisposing and accidental causes without ever having had an attack of it. And, on the other hand, it has been produced in other individuals by the most trivial causes. This is what should make the dental practitioner more careful in the administration of agents of whose effects and results he is not cognizant. And as the administration of ether or chloroform never takes place without producing a certain state of hyperemiæ, he should be particularly careful in examining a patient in whom he might suspect a predisposition to the affection. It is these considerations which induce me to go into details, even at the risk of being tedious to my readers.

Now that we have seen what could produce this functional disturbance of the brain, we will proceed with and follow our subject by examining the age and sex most likely to be exposed to it.

AGE.

Whatever may be the causes of apoplexy, it very seldom attacks young subjects. It is more frequently in adult and old age that it selects its victims.

SEX.

The sex does not offer by itself any very marked difference; still the male is more exposed to it because of his habits and pursuits, and also in his excesses we find more predisposing and accidental causes.

SYMPTOMS.

In sudden apoplexy the individual ceases to live the moment he is stricken down, and the physician only comes in time to confirm his death. This is the state in which the body is found: the head is tumefied, and the face is of a dark purple color, also the neck and ears; the eyes are protruding from their sockets. In all cases the heart and arteries have ceased to beat, respiration does not take place, and all motion and sensitiveness are abolished. "Death is evident."

PRECURSORY SYMPTOMS.

The most ordinary apoplexy, whether it is nervous or sanguine, takes place suddenly; but nevertheless, in a number of cases, the patient feels some precursory symptoms, and which are necessary to know to establish a diagnosis. These symptoms will sometimes manifest themselves several years before the patient is stricken; oftener they precede the attack only by a few months, weeks, days, and even only a few hours; and still the precursory symptoms can show themselves simultaneously with the apoplectic stroke. A man of the most happy, sensible disposition, very lively, etc., becomes melancholy, indifferent, capricious, impatient; and his habits also become changed—he loves solitude, and keeps far from his dearest friends and relatives. He complains of vertigo, fantastic visions, dizziness, of noises in the ears; his head feels heavy, his complexion is more animated; even his speech is changed—it becomes more brief and slow. He is also inclined to sleep, but cannot, or, if he does, it is only to be tormented by painful dreams; he is very apt to wake up suddenly, when he finds himself bathed in perspiration. He loses his appetite; his digestive organs perform their functions slowly, and he is constantly costive; sometimes also it is diarrhœa which torments him. He becomes tired at the least exertion; his walk is staggering; from time to time he feels weak and faint; his pulse is heavy, full, and slow. He has no steadiness; he even feels a disgust for any kind of study; his intellectual faculties appear to be generally altered.

Sometimes, upon the approach of an attack, the horizon appears to his vision like a vast plain on fire, and the immediate surroundings about his person appear as red as blood.

We must not believe that the precursory signs which we have just indicated, are to be found all together or at the same time in an individual threatened by apoplexy; but I have to describe them in order to aid us in the diagnosis which we will have to establish, and to help you in your conduct toward your patient, to prevent one of the most unfortunately frequent and terrible diseases.

SYMPTOMS.

Ordinarily the face is animated; the cheeks, nares, and lips are of a purple color. These symptoms generally take place in sanguineous apoplexy. Sometimes, on the contrary, the face is pale, of a leaden, sallow, or yellowish tinge; these last-named colors are presented more ordinarily in cases of serous apoplexy. The eyes are often found to be wide open, protruding, red, and sensitive to the light; the conjunctiva is highly injected; the eyelids are tumefied, and of a violet color, but sometimes the eyes will be closed, and when you lift the eyelids they appear to be deep in their sockets, dull and languishing in expression, the pupil dilated and motionless, though sometimes it is found to be greatly contracted; but this appearance takes place only in more advanced stages of the disease.

Sometimes we will find the patient to be comatose, and when we try and succeed in withdrawing him from that state, all that we can obtain is inarticulate, unmeaning sounds.

Still we may find him laboring under a great agitation and a fugacious delirium. Very frequently, there is a total loss of consciousness, sensation, and motion, combined with slight convulsions, or subsultus tendinum.

Sometimes the patient preserves his senses; is conscious of his state, but is unable to express his mind; oftener his respiration is high, rattling, stertorous, while at other times it is hardly perceptible, and a frothy mucus can be seen issuing through the nose and mouth.

At intervals the heart and arteries will beat with great force, particularly the carotids; the pulse is full, heavy, without being hard, or bounding. The jugular veins are swelled, and do not respond to the beatings of the arteries; sometimes also the pulse is small, filiform, and weak.

The skin is generally warm, covered with perspiration; a few chills will intervene from time to time.

When the apoplexy is not very intense, the hearing remains unimpaired.

Deglutition is very difficult. Injected liquids are thrown up again either by vomiting or by regurgitation; all the functions of digestion are suspended. Now, after such a long list of symptoms, we will find that, in more than forty cases in one hundred, the symptoms produced by anæsthesia are the perfect counterpart of these just described. In my next communication I will present to the profession some most interesting observations and physiological phenomena which have occurred to me during my experience with anæstasia, an experience of more than five hundred cases.

To be continued.

SOCIETY OF DENTAL SURGEONS OF THE CITY OF NEW YORK.

This Society was formed in March, 1860. Dr. *A. McIlroy* was elected President, whose able address upon that occasion we published in the April number of this journal. Since the formation of this Society it has steadily increased its members, with a fair prospect of results that will reflect credit upon the Dental profession as well as upon its individual members. Heretofore, its discussions have been somewhat desultory; therefore, we have not published any of its proceedings until it became permanently organized.

We give in this number a very full report of the discussion upon *extracting teeth*, which we have no doubt the profession will peruse with interest.

We hope to be able to give full reports of the discussions of this Society from time to time. Its meetings are held the second Wednesday of every month, at 640 Broadway, and we doubt not that all dentists in good standing would be cordially received at any of its regular meetings.

NEW YORK DENTAL SOCIETY.

The Society held its regular monthly meeting on Wednesday evening, October 10, 1860. Dr. *McIlroy* in the chair. Dr. *T. H. Burras* was appointed Secretary *pro tem.*

The President announced the subject of discussion for the evening:

THE EXTRACTION OF TEETH.

Dr. *Allen* could not hope to say any thing new on the subject; but he would give his mode of practice. He would commence with the extraction of superior incisor teeth. He used a small-beaked forceps and slit the gum from the outer and inner surface, making a perpendicular cut a little above, especially if the crown of the tooth be so decayed that there is any danger of its breaking. The instrument would then pass up on the neck of the tooth, firmly embracing it, and by using a rotary instead of a lateral motion, the tooth can then be very easily started from the socket. He used but very little lateral motion in removing a tooth, especially incisors or canine teeth. The rotary motion will take it out without fracturing the alveolar, and the amount of force required is far less than from lateral motion. If it is a fang of a tooth, he used the Parmlee forceps, with a sharp-edge beak, which he passed up, separating the gum, and embracing a portion of the alveolar process, and the fang will usually come out very readily. By the same movement he removed canine teeth with equal success. He was aware that the screw forceps had been used, but in his own practice he never found it of any great value. Using the screw with a deep incisor, he found it very difficult to get the thread in sufficiently firm to remove the fang; if an inflamed tooth, the force necessary to work the screw in would be so great as to give unnecessary pain. He seldom used the screw at all, but depended upon the forceps and elevator almost entirely. The old-fashioned turn-key he had not used for many years, and he found no case where it became necessary to do so; and, although he found some worthy dentists, with whom he had been acquainted for many years, occasionally using it, he thought it was more a matter of habit than any thing else. He did not use the Parmlee forceps for incisor teeth in every instance; there was one with a very thin beak he sometimes used; but for bicuspids he used the Parmlee more than the other; and in extracting bicuspids, he would remark that he employed the same rotary motion that he did in extracting incisor and canine teeth, succeeding almost invariably without using sufficient lateral force to fracture the alveolar process. For the fangs of bicuspids and incisors, he used a small-pointed forceps which he could pass far up on the fang. With these three instruments he was able to take out all the incisor, canine, and bicuspid teeth in the upper jaw. For the upper molars upon the right side he used a forceps with a beak that would embrace the inner portion of the tooth and a point passing between the two outer fangs of the two molars. For the left side, he used an instrument just the reverse of the other in shape—the ordinary right and left molar forceps. He made it a point to embrace a molar tooth above the crown, by crowding it up until it passed between the fangs, and by embracing the inner fang, he seldom failed to make a successful operation. If the crown be decayed, he used one of the smaller beaks and took out the fangs separately. If he found the fangs still connected, and the crown all gone, he used a sharp instrument, like an elevator, separated the fangs, and, with a small-beaked forceps, picked the parts out. In extracting the *dens sapientia*, or wisdom teeth, if entirely behind the other teeth, he used a bayonet-shaped forceps invariably, although he had an instrument, highly recommended, which came together like a cutting instrument, forcing the tooth out.

In reply to an inquiry from the Chair, as to whether he was in the habit of lancing gums,

Dr. *Allen* said, if the gums adhered to the teeth he thought it important to lance them, but when the gums were in a spongy condition he seldom used the lance. He preferred not to use the lancet when not necessary, for the reason that the lancet frequently frightened the patient as much as the extracting instrument. Still he knew instances in which serious injury was done by not using the lance. One case in Cincinnati, he recollected, where a dentist, in attempting to extract a wisdom tooth for a lady without lancing, tore the roof of the mouth so badly that it had to be stitched up, which could not have occurred had the gum been properly lanced. Therefore it was necessary to use the lancet in most instances; and an experienced dentist would be always able to judge when to do so. Where he had a number of teeth to extract for one person, and found the gums in a condition that they adhered to the teeth, he often separated half a dozen at a time, then took his forceps and extracted four, five, or six at a sitting, in quick succession. Instead of stopping every time, and letting the patient spit out the blood, he did not find it necessary to stop more than two or three times in pulling out eight or ten teeth. This method he approved of strongly, for he found that the quicker an operation of this kind was over the better. Frequently he had patients who would come in and say, "I want one tooth taken out to-day, and another to-morrow, and next week another—but I can't stand more than one at a time." He generally succeeded, however, in getting them to have all taken out before leaving the chair. In the extraction of the lower teeth, he used for the incisors a small-beaked hawk-bill forceps, and for the bicuspids below, he used a hawk-bill—the ordinary left and right forceps, and for the *dens sapientia*, in the inferior jaw, he also used the hawk-bill forceps, and no other. For removing fangs in the lower jaw, he frequently used an elevator. Upon the right side he used a kind of punch, and, slitting the gum, threw his weight upon the punch, resting his arm against his body, which should be always done in using an elevator; otherwise, if the fang should crumble, there would be danger of the instrument going too far and injuring the tongue or the mouth; but by having the forearm rest against the body, there was only the play from the muscle of the arm, and no danger of the instrument doing injury. It required some dexterity to use an elevator properly, but he regarded it with favor. In some cases he used the hook elevator, with which he removed a tooth or fang very easily. These were about all the instruments he used in extracting teeth.

Dr. *Hurd* considered this a very interesting subject. He had found that a great deal depended upon preparing the patient's mind. The more tenderly the operator could treat his patients—the more he could show them that he was going to act the part of a friend—the more successfully he prepared them. He agreed with Dr. Allen in the practice of inducing the patient to have all the teeth he wanted out extracted before leaving the chair. After taking out the first tooth, the jaw became numb, and he could take out the others better than if he allowed the patient to raise his head from the rest. He differed from Dr. Allen in this, however, that he invariably lanced the gums. When he commenced practice, he was more ready to regard his patient's wishes against his own judgment, and he once undertook to extract a second molar tooth for a lady, at her suggestion, without lancing the gum. The result was, that he stripped the gum to the centre of the mouth—a painful thing, and one he was always ashamed of. Of course every man should use his judgment. The object of lancing was to loosen the gum, and if that were already loose, there was no use in giving pain unnecessarily. The use of the turn-key he disapproved of; though there had been cases where one side of the tooth was decayed, and the other left, where perhaps it might be used with advantage. He found himself very much a creature of habit. For instance, he at times became so habituated to the use of the Parmlee forceps, that he would adapt it to almost any purpose; at other times he would hardly ever use it. The simple punch elevator he found very useful; but the hand should be steadied. He had had an early experience of that fact; for in attempting to take out a tooth with one, it slipped and gave him a very bad finger; he considered the simple elevator one of the best things to extract roots. He frequently used the screw in taking out roots. The compound elevator, or elevating forceps, he used for extracting wisdom teeth, upper and lower, and he thought most dentists, after getting into the habit of using it, would find it answer better than any other. Where they found the wisdom teeth all gone, nothing left but a shell, which was frequently the case, this instrument proved very useful, for they would require but a very slight hold, the strength of a pipe-stem, to remove the stoutest tooth.

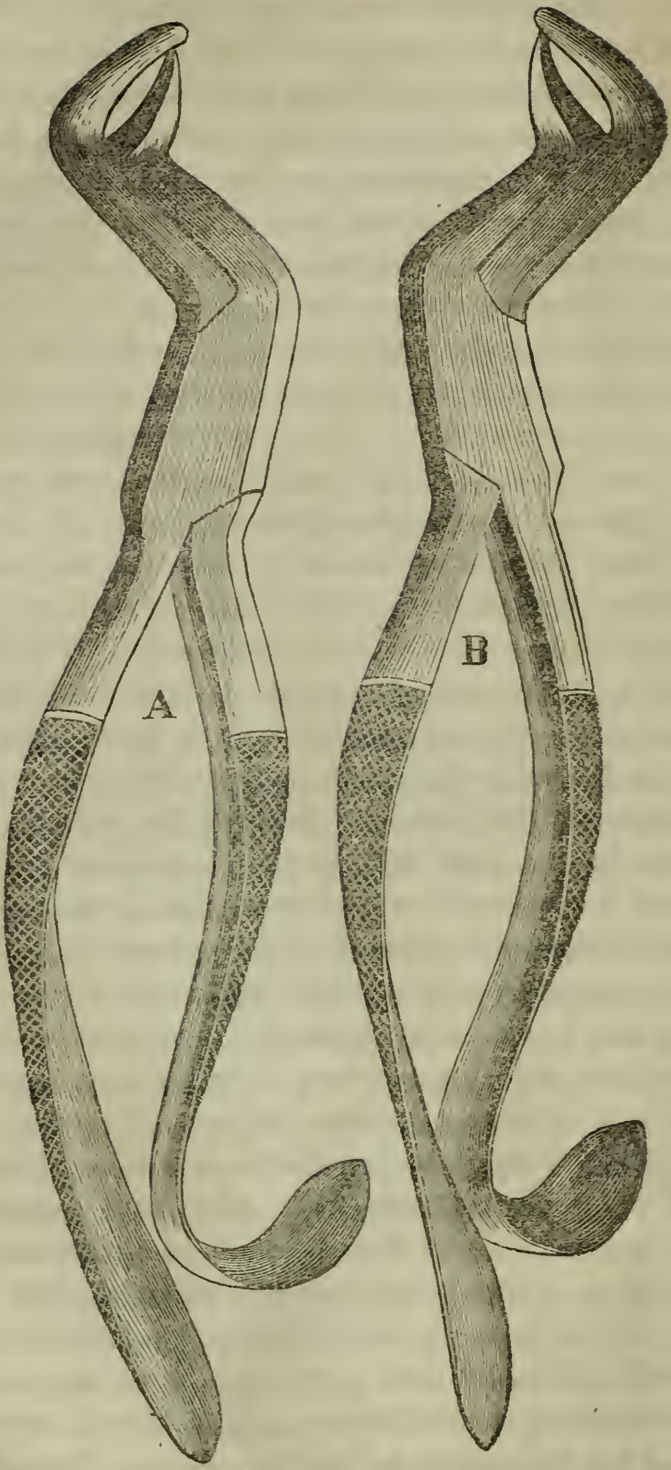
Dr. *Roberts* inquired how he would do, supposing the second molar was gone.

Dr. *Hurd* replied that in that case he took a piece of hickory wood and forced it down between the teeth ; he had even extended a piece of wood as far as to the first bicuspid. He had never failed in taking out a wisdom tooth but once. In extracting under molars, his habit now was to stand on the left side of the patient. Formerly he used to stand right in front, with the old hawk-bill instrument, getting some one to hold the patient, and bring the tooth out very nicely. He always used the rotary motion, except with bicuspids and molars.

Dr. *Walter B. Roberts* should differ somewhat with his friend who had spoken with regard to the use of the different instruments. Extracting teeth was a subject which, so far as writing upon or debating it went, the profession paid but little regard to. It was but seldom called up in the societies for discussion, and he did not know of any dental convention where it had been debated. He said that kind treatment and gentleness toward patients was one-half the battle in the extraction of teeth. A kind word to patients suffering from tooth-ache would instil confidence and induce them to submit to the pain of extraction, without being aware of the full amount of suffering they underwent. These were important facts the profession was apt to overlook. The manner in which a patient was approached had its effect. Many a person would go from one to two or three weeks, or months, suffering tooth-ache, from the dread of extraction, for having been harshly treated by their dentist, or having had a bad operation performed. And, certainly, the pain of extraction was not a slight thing if done in the most gentle and scientific manner. When a tooth was aching, at the very height of inflammation, and you took hold to pull it out, it was certainly painful: there was no dodging the question. He had been through the mill himself. He had pulled teeth for fifteen years, and never lost but two of his own in his life, and the last one he lost he thought would nearly kill him; yet it was but a small operation in comparison with what he had performed for others. The first thing, when undertaking the operation, was to examine the tooth carefully, and see where its strength was, and the direction the fangs ran. Then the selection of the instrument for the tooth to be pulled was another important point. He was aware that some operators used one instrument for nearly every tooth in the head.

Now, an instrument might be so shaped as to enable the operator to do a vast amount of work with it, but he required a variety of instruments, and required to select particular forceps for particular teeth. Then his practice was to lance the gum thoroughly, whether for the root, or a whole tooth, or a part of one—if in a grown person's head. Children's teeth should be operated upon gently, and the operator should make no false motions about them. Consequently, if with very small children he undertook to lance the gum, he might get into trouble, and that might be all he could do for the child. Again, with children, the gum was not so apt to adhere to the tooth and tear it, as in a grown person.

In regard to extracting central incisors, his method would not differ much from Dr. Allen's. He used a narrow beak almost invariably. When he first commenced extracting teeth, he got hold of the wide-beaked forceps, and he hurt a good many patients badly by pressing the wide beaks down the gum. There was only a certain part of the tooth, most generally the roots being oval, that they could rest the forceps on; consequently, the narrower the beak, the less pain the patient received in sending it up the root. His practice was to cut deep, and push the forceps as high up the root as possible; it then required less rotary motion to take the tooth out—the leverage was greater, and there was less liability to break the tooth. For bicuspids he used a narrow beak, bayonet-shaped; standing at the side of the patient, supporting the head firmly with the left hand, and always bringing the tooth straight down. The bayonet-shaped forceps was almost always used for front teeth. He had a straight one, but seldom used it; for he found the bayonet shape was handier, even if he wanted to get out a tooth in front, being more out of the way of the lower teeth. For the upper molars there was one stereotyped style of forceps, which was perhaps as good as could be, but he did think that for the extraction of wisdom teeth they had a great lack of proper-shaped instruments. There was not one he knew of, except the one introduced by himself, by which they had that control over the upper wisdom teeth that they had over the molar or front teeth. The great difficulty with wisdom teeth was that they were situated so far back in the jaw; and if there was a sound, full set of teeth at the time they were growing, they struck against the root of the second molar and were projected either out or back; he had never been able to find an instrument by which he could get a good hold of the wisdom tooth, and have control of the forceps. He had spent a great deal of time upon these forceps, and had an instrument-maker make a set with different crooks, which proved unsuccessful. He afterward got a skull, with all the teeth in, put it under his arm, and set the beak on the wisdom tooth; he then told the mechanic to make the crooks so that he could hang fast to the wisdom tooth with his forceps—have the beaks so that they would stand almost perpendicular with the tooth, and yet have the handles come in the centre of the mouth, as near as possible. He had a pair made for the right and left side, so that he could stand with the head under his arm, take hold of the wisdom tooth, and turn it out, just as handily as he could take hold of a front tooth or bicuspid. The cuts A and B represent these forceps; they are right and left. Formerly he dreaded to pull a wisdom tooth; but with these instruments he found it an easy task. About five or six pair of forceps answered for the upper teeth. He used but two pair, principally, for the lower teeth. He did not know but other dentists found the extraction of lower bicuspid and molar teeth perfectly easy; for his part, he had experienced difficulty in that direction, especially with the old style of right and left instruments for the lower molars. The left side he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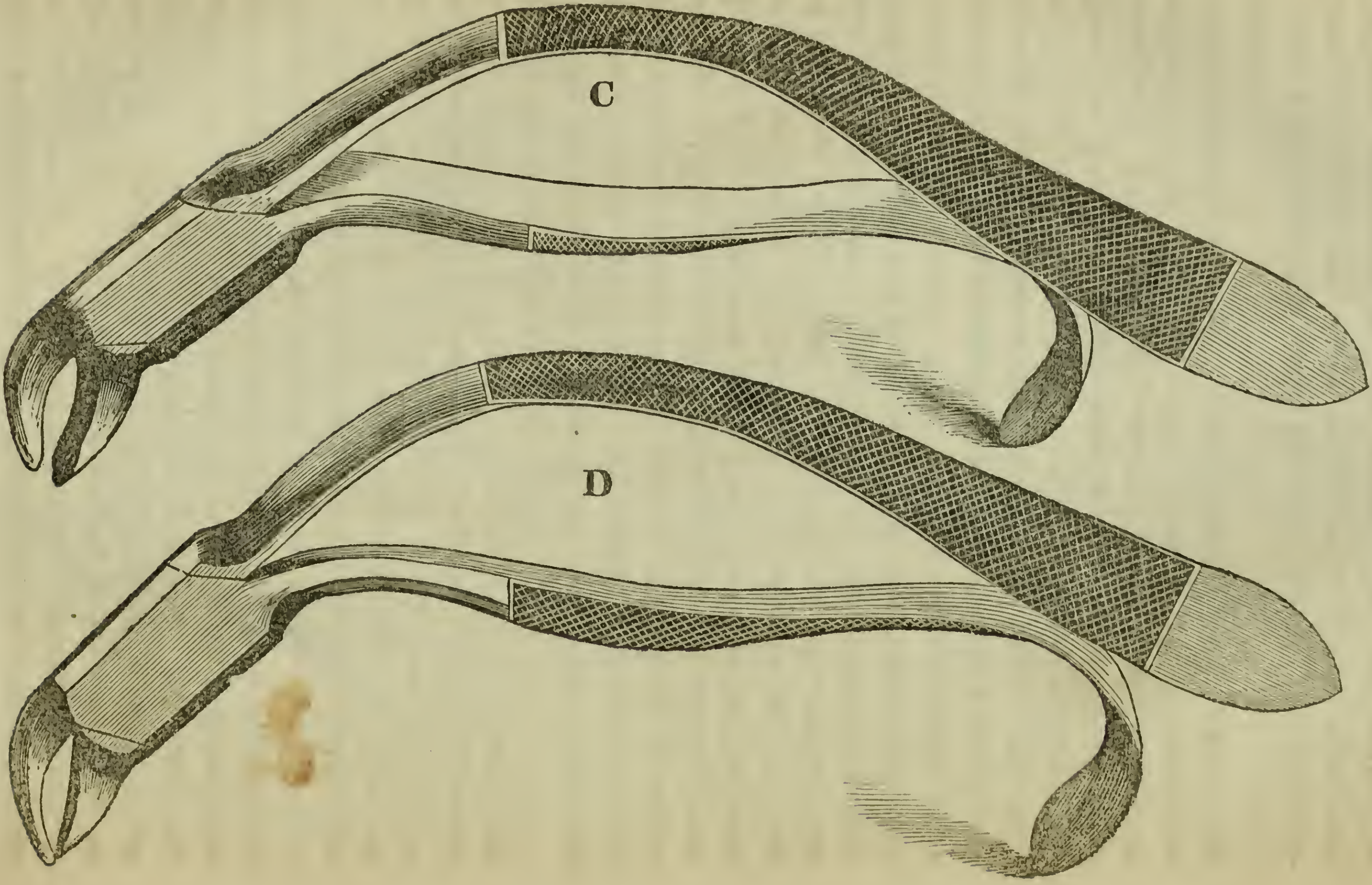
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could work comparatively well, but the right side he never could work with any advantage. He had a pair made as represented in cut C, so that by standing a little above the patient, he was enabled, by the turn of the wrist, to grasp either the right or left molars, and raise them nearly in a straight line with the sockets. He also constructed another pair, with the same curves and narrow beaks, for lower bicuspids and wisdom teeth, represented by cut D. With these two instruments he could extract nearly all the lower teeth.

With regard to lateral motion, he sometimes found eye teeth, where the roots were crooked—for instance, eye teeth that had been used for a great many years, all the other roots being gone—that he had to use considerable lateral motion as well as rotary, requiring, besides, a large amount of force to start it from the socket. All such cases must be left to the judgment of the operator.

Of the compound elevator, he would say that he had tried it, but did not use it long. He tried it in a few cases, and found it hurt the tooth next to the one he took out about as bad as it did the one he extracted. He always considered it gave greater pain than the forceps. After he got his instrument for the wisdom teeth, he had no occasion to apply the elevator. By lancing the gum well, pressing the beaks of the forceps well up the root of the tooth, and then, with a gentle, firm pull, you will most invariably succeed in removing most every tooth you undertake with the forceps. There were cases where it was almost impossible to get the tooth out with any thing. He had seen a pair of forceps put on a tooth, with merely a small hole going to the nerve cavity, otherwise as strong as though there were no cavity in it, which broke it off through the nerve cavity, leaving two or three prongs in the jaw, which it was almost impossible to get out. He had in such cases got the prongs out by separating them with cutting forceps, and removing one at a time—a painful operation. These were cases which occurred with every one, and for which no rule could be laid down.

The screw he sometimes used, and considered it a valuable instrument, and in some cases almost indispensable. Indeed, almost every instrument made was valuable, and he thought they could not have too many. As to the turn-key, he had never seen a case where he would use it for the past ten years.

Dr. *Franklin* made a suggestion which might prove useful. They had all been to instrument-makers to get a set of forceps which would suit them, and they knew by experience that not once in five hundred times could they get what they required precisely, in consequence of the difficulty of making the model. Now, by taking a straight forceps and moulding a leaden one in sand, they could bend that leaden pattern into any desired shape, and then the instrument-maker would be able to follow it, giving the instrument the precise curve required.

Dr. *Roberts* considered the suggestion very important. It would have saved him a vast amount of trouble in getting up his forceps for wisdom teeth had he known it.

Dr. *Burras* said he had seen all the varieties of forceps. He had commenced with the good old-fashioned turn-key, and then they had not any thing else to extract with. They hailed with *éclat* the introduction of the forceps. He yet preserved the turn-key with which he had commenced, but he had not used it once in twelve years. He mentioned a peculiar kind of forceps used by Dr. John Burdell, with a long pair of handles, and a crook at the end, which, when extracting lower teeth, he placed on his shoulder and pulled upward—always giving a straight pull and avoiding any lateral motion. He considered that the less lateral motion there was in pulling teeth the better.

Dr. *Allen* taking the chair,

Dr. *McIlroy* made a few remarks. He thought the subject had been decidedly neglected. It was certainly a very important one. He sometimes thought that in the mania for "perfection" which pervaded all branches of dentistry, practitioners were afraid to touch the subject lest it should be thought they could not save every tooth. Many persons, in treating on dentistry, would lead the world to suppose that the definition of a dentist was, a man who never made a failure in any case—a perfect chemist, a perfect physician, a perfect surgeon, a perfect Christian, a perfect artist, and with perfect mechanical faculties, able to save or restore, if not endow with vitality, all teeth that come to him.

This was one reason, he thought, why the subject of extracting teeth had been so phoo-phood.

In relation to extracting central incisors, Dr. Allen's doctrine was good, but he was sorry he could not say as much for his forceps. It had a fault common to ninety-nine out of every hundred—that was, the length of the jaws was too great by one-half. There was not only a loss of power, but also the risk of slipping. The forceps he had settled down on for many years past had short jaws. He used for central incisors a straight forceps. In difficult cases, where the root was decayed, he used the Parmlee forceps, and sometimes the screw. Dr. *McIlroy* went on to describe the instruments which he was in the habit of using. He said of Dr. Roberts' lower molar tooth forceps, he had found nothing to equal it. His remarks on the whole matter were brief, for the reason that he intended to refer to the subject at another time.

Adjourned to Wednesday, October 24.

October 24, 1860.

Dr. *Burras* called the meeting to order.

Dr. *Parks* was appointed Secretary *pro tem.*

The minutes of the last meeting were read and approved.

Dr. *Burras* presented a communication from Dr. Peyrellade, requesting that he should still be considered a member of the Society, during his absence in Cuba.

EXTRACTION OF TEETH.

Dr. *Roberts* suggested that the discussion this evening be particularly directed to the question, under what circumstances should teeth be extracted?

Dr. *Allen* said that many dentists favored the extraction of three or four remaining teeth, bicuspids for instance, in the lower jaw, even when firm and sound. He would remove them, if in the upper jaw, but not from the lower jaw, for they would serve as an anchorage to the under set of artificial teeth; and the patient would much more readily acquire the faculty of masticating his food with artificial teeth, if he had two or more bicuspid teeth below, than if all the teeth were artificial. In the upper jaw a fair equivalent could be rendered for the loss of three or four sound teeth. But in the lower jaw he would let them remain, even if they were molars or eye teeth. If a tooth could be saved by filling, he would do so, except under the circumstances already mentioned, especially when there was a tooth in the other jaw to antagonize with it. He was not in favor of always extracting a tooth, even when the decay has reached the nerve. The nerve may be killed and the tooth rendered useful for many years. He had destroyed the lining membrane of teeth years ago, and filled them; and they were doing good service now. Until the time comes when artificial teeth must be inserted, he would save the natural teeth as long as possible; but when the time comes when artificial teeth must be inserted, he would say, out with them. It was better to remove the old natural teeth and stumps, and place the artificial teeth upon the gums. There were some exceptions to this. If a central incisor is decayed, and too far gone to be filled, and the fang is a healthy one, he would cut off the crown and engraft a new crown upon that fang, which he considered the neatest way a front tooth could be set. If he found the lining membrane alive, as it was usually, he had perfect confidence that the engrafted tooth would stand many years. But if the lining membrane has died away, and has never been painful, it is extremely doubtful whether the patient will not suffer more from putting a new crown upon that fang than the tooth is worth; because such cases often result in inflammation. He would prefer taking out a tooth of that description. He could conceive of a reason why a tooth in that condition should give more trouble than where the lining membrane is alive. The investing membrane may have become diseased, to a greater or less extent, by contact with the dead nerve. The diseased action may have extended up the periosteum, and yet the patient may not suffer while there is a vent-hole open. But let that be stopped up tight, as with a pivot, and there is a pent-up mass of gaseous substance formed there seeking to escape; and being prevented, it will produce inflammation at the apex of the fang, which will usually terminate in suppuration. Under another condition he would consent to leave it, although the nerve should be dead. If at some previous time inflammation had occurred, terminating in suppuration, which had broken out through the alveolar process, in the form of a gum-boil, and if there was a suppuration and matter issuing there every little while, a tooth might be engrafted upon that so as to be better than putting in a plate, and he would let it stay, if a front tooth. As a general rule, he would advocate extracting old diseased teeth after they became useless in the mouth. It leaves the mouth in a more healthy condition, the saliva will be more healthy with which the food is moistened, and the breath will be the more pure.

Dr. *Hurd* advocated saving every tooth that could be saved, unless its presence would be a greater annoyance than benefit to the patient. If the nerve is exposed, still he would save the tooth, especially if it should be one of the six front teeth. There was trouble sometimes in filling nerve cavities, but he would suggest a remedy, suggested by the treatment of a lateral incisor of his wife's, which he had filled two or three years ago. There were symptoms of suppuration; but his wife came into the office one day and took a little cotton, saturated with chloroform, and laid it as near the apex of the tooth as she could. The next morning the inflammation had subsided. About three weeks afterward the symptoms began to return, but were again dispelled by the same remedy. The chloroform raises a blister immediately, and in ninety-nine cases in the hundred, the counter irritation will prevent the inflammation. One reason for injurious effects in putting a new crown upon an old stump was probably that it was put on too soon. His plan would be to let the tooth go three or four days after it is prepared for the new crown, before the crown is placed upon it, or if the patient will not submit to that, to put in a soft pine pivot, telling the patient to come back in a week or two and have a hard pivot put in its place. The tendency to inflammation consequent upon the jarring preparatory operations, thus has time to subside. He was especially careful when the nerve was dead. Dr. H. proceeded to speak of the injury done frequently in extracting the first teeth of children. He frequently found it difficult to convince applicants that children's teeth need not be removed the moment they are in the least discolored. Mothers would bring their children, with a tooth discolored, and another coming inside of it, and want it taken out; and it was sometimes almost impossible to make them believe that the best thing was to let it remain exactly as it was, and let nature accomplish it. A dentist, by extracting a tooth under such circumstances, might do an injury which would last into manhood. A person had come into his office a short time ago, who had an opening on the outside of his face, about the size of a pin. He took a broom splint and forced it an inch and a quarter into the cheek. The man said he had had no trouble or pain from it, and mentioned that he had had a tooth filled not long before this made its appearance. Upon examination, he found that the second molar tooth had been filled with cement. It had been filled four years The nerve was destroyed, and he had had very little pain from it; but after the tooth was filled, there was a general pain throughout the cheek. The tooth had never ulcerated, never felt sore, never felt long. With the man's permission he took out the filling, and of all things he had ever seen in his life, that was the worst. It scented his office completely. He told the man that was not a very healthy thing to have in his head, and advised him to have it out. The man demurred, but the next morning came in and had the tooth taken out. Dr. H. split the tooth apart, and found its canal full of quicksilver. The investing membrane, although it had ulcerated and burst, was filled with quicksilver. After some five or six weeks the opening in the cheek healed. The abscess was in the under jaw, three-quarters of an inch back of the tooth. Now he would give an illustration of a tooth which ought not to be extracted. A man came into his office to have a tooth taken out, complaining of great pain in his eye and in his head. Upon examining his teeth he found them as sound as teeth possibly could be. He told the man he might rest assured that there was no trouble with his teeth. The man said he knew that his trouble came from his teeth, and insisted upon having the tooth taken out, threatening to go to some other dentist. He then took the tooth out, a heavy molar tooth, perfectly sound. The man went home, and in about a week came again and wanted to have the next one taken out. Dr. H. refused. The man threatened to go to somebody else. Dr. H. still positively refused, and advised the man to go and consult Dr. Parker. The man said no, he would go to another dentist and have his tooth taken out, and left. It turned out afterward that the man was so influenced by the decisive refusal to extract his tooth, that he went to Dr. Parker, who convinced him that neuralgia was the whole trouble, and gave him something which entirely relieved him. Dr. H. concluded by saying that he ought to have governed his feelings and not to have extracted that first tooth, confident as he was that it was not the trouble.

Dr. *Burras* inquired of Dr. Hurd whether he ever prescribed any thing in cases of that kind—any medicinal remedies?

Dr. *Hurd* replied in the negative.

Dr. *Roberts* said that the first thing to consider was the deciduous teeth of children, for upon the proper treatment of them much depends in the future. To know when to extract teeth was almost looking into futurity. Most of our difficulties with irregular teeth arise from the improper extraction of the deciduous teeth. As a general rule, he would say, never extract a deciduous tooth until you are able to remove it with your fingers. But there are exceptions to all general rules. Inflammation may be so great as to require extraction. But he had met with very few cases where it was necessary to extract deciduous teeth before the time pointed out by nature. If dentists would listen to the teachings of nature, and only assist her when she is unable to perform her work correctly, there would be fewer irregularities to treat than we now have. Children are daily brought to the dentist to have teeth extracted, in consequence of some slight defect, two or three years before they should be taken out. For himself, he would not do it, even if they left him to go to some other dentist. Children's teeth should be watched by parents and guardians with care, as it often occurs, as far as my observation goes, the features have been sadly distorted by the too early extraction of the deciduous teeth, or of the second ones, before the child is grown. There are adult persons who disregard their teeth, never take care of them, but whenever a tooth aches go to a dentist to have it extracted. Upon examination you find a dozen other teeth defective. You know that you can save that tooth, and all the others, by proper treatment; but you are satisfied that you cannot persuade that person to take proper care of his teeth. Under such circumstances, the dentist would be forced to remove the tooth; for if the person should spend five dollars upon that tooth, and leave the rest untouched, the five dollars would be thrown away. A dentist should save all the teeth he can, so long as he can make his patients act their part in the matter; but if he cannot influence them, he must act according to circumstances.

In extracting old roots, also, in order to insert artificial ones, the dentist is called upon to exercise his judgment. He had found better success, and given better satisfaction, in removing entirely from the upper jaw all the old roots, even if two or three should be sound teeth and in good condition. In examining a tooth, where the nerve is exposed, in order to determine whether to extract or to fill that tooth, it is necessary to take into consideration the temperament of the patient, and the condition of the teeth and gums. He was disposed to advocate saving a tooth with the nerve exposed, if possible. But unless the condition of the mouth is such that the lining membrane of the tooth will remain healthy, in a few years there will be suppuration, although the tooth may do good service for five, ten, or twenty years.

Dr. *Ingersol* had expected the subject to come up of the mode of extracting teeth. There were some points with regard to that not touched upon at all in the discussion at the last meeting. A simple turn of the wrist might make one of these difficult cases any day. Dr. Roberts had said that he considered the lower bicuspids difficult teeth to extract. Dr. I. considered the upper bicuspids, in a full set of teeth, more difficult. But a still more difficult case was this: a second molar, upon the left side, in the lower jaw, with roots as small as a knitting-needle, belonging to a female about four feet high; and that tooth is accidentally broken off. How are those roots to be taken out? There is no trouble with a large man—the bigger the better; but in these very delicate females the teeth are difficult to remove; and it was with regard to such cases that he particularly desired some explanation from old operators. Upon another point he would disagree with others who had spoken. He would never leave any thing in the mouth with a gum-boil over it, or any ulceration about it. If the patient would not have it out, that was the patient's lookout; but it would be his advice to have it taken out. As to leaving one or two teeth, when putting in a set of artificial teeth, he could not guaranty such work at all, and would not do it unless paid in advance, with no questions to be asked. But when the question is simply the extraction of a tooth, especially one of the six front teeth, he would save it if possible, whether the nerve was exposed or not; for it would be better than two or three artificial teeth. He would save it, if possible, whether ulcerated or not. If there was a gum-boil over it as large as his fist, if he was certain that the periosteum was in a sufficiently healthy state to be rendered healthy, he would save it. He had a tooth which he would not take fifty dollars for, which at least a dozen of his dental friends had advised him to have extracted.

Dr. *Roberts* narrated the circumstances of a case in his own experience. It was of a gentleman who thought considerably of his teeth—one of those whom dentists like to work for—who had a left central incisor, with one-half of the crown broken off, which had been filled with amalgam ten or fifteen years. That tooth had commenced aching, the gums were swollen, and matter was discharged from the roof of his mouth and from the socket of the tooth. The glands of his throat had become very painful. He removed the amalgam filling and drilled a hole through the apex of the root, and injected nitrate of silver through, so it escaped where the matter was discharging; he then introduced floss silk saturated with creosote to the apex of the tooth. This was repeated at intervals of four or five days, and continued for several months. The matter finally stopped discharging, and the tooth became solid in the jaw. He then filled it, and it became as good a tooth as the man had in his head. In this case he was confident that the lining membrane was entirely destroyed, and he had no doubt that a great deal of the alveolar process was also absorbed. This was a tooth that should not be extracted, yet a very difficult one to determine how to treat.

Dr. *Burras* said that the cases cited to-night had generally been of teeth which were diseased. There were cases in which healthy teeth were so situated, or the circumstances were such that they should be extracted; and he wished attention to be called to such cases at the next meeting. As an illustration, he mentioned the following case: A gentleman had come to him with an abscess on his lower jaw. There was no appearance of decay in his teeth; he had been told by one that he had a cancer, by another that it was a *fungus hematodés*, etc. Upon examination, Dr. B. pronounced it to arise from a wisdom tooth that had not obtruded itself yet, although a healthy tooth. This abscess had lasted for months. It seemed that the second molar had a projecting crown; and the sapientia was trying to force its way up and could not do it. It was necessary that the tooth should be taken out. In attempting to do this, he broke it off; but was not disconcerted at that, for a dentist who never broke off a tooth, either extracted very few, or lied like a dentist. (Laughter.) Upon examining this tooth, he found it perfectly healthy. The periosteum had no inflammation; there was no ulceration. The disease was not there; it was around it. Such cases as this he considered very interesting to the profession. Again, there are many secondary teeth which come in positions they ought not to occupy. Ought they not to be removed, although perfectly healthy?

The further discussion of the question was postponed until the next meeting; and on motion,

The Society adjourned for two weeks.

The association met, pursuant to adjournment, on Wednesday evening, November 15; the President in the chair, and Dr. W. B. Roberts, Secretary *pro tem.*

Dr. *McElroy* having vacated the chair in favor of Dr. *Hurd*, proceeded to exhibit to the society a very full and excellent collection of instruments—some score and odd forceps, punches, screws, etc. For extracting the upper molars, when badly broken, he highly recommended the Parmlee forceps, with a beak curved at about forty-five degrees, which was intended to reach all classes of broken teeth. By dissecting the gum back a little from the alveolar process, and making a perpendicular incision above the centre of the tooth, and thus making flaps in the gum, the operator was able with this instrument to grasp between the two roots in the upper molar—being sure to bring out two roots—and the third was easily disposed of. He considered this an invaluable forceps. It never touched the nerve, and as to the alveolar process, it was not sensitive. Then came a forceps invented by Dr. Roberts, which in his practice he found to be a most excellent instrument for the extraction of lower molar teeth, especially on the right side. Unquestionably, the worst tooth in the mouth to extract was the first lower molar tooth. He exhibited two original instruments he had made for that very tooth—the first and second molars—but the maker failed to carry his idea out, and he did not use them much. With the ordinary forceps they had to extract this tooth at an angle, which was a great disadvantage. The desirable plan was of course to get them out on a line continuous with the form of the socket. By means of the Roberts forceps this could be done, by a little lateral motion after getting hold, and then drawing out on a line curving slightly backward with the shape of the roots. He had used the Harris forceps for the lower molars, but the disadvantage with them was, that you were at an obtuse angle with the line of the socket. It was used a good deal for both sides of the mouth. Never had much success in extracting "across the mouth."

Dr. *McIlroy* drew attention to the fact that the jaws of his forceps were all short; and he claimed to get increased power, and a longer leverage, with less liability of the instrument slipping down on the weak part of the tooth, by that shape.

Dr. *Roberts* inquired if the shortness of the jaws gave any power beyond that of crushing the tooth.

Dr. *McIlroy* considered that it gave great additional power in extracting the tooth. Taking a forceps which was very long from the pivot to the joint of the beak, he did not have half the power that he had with the short beak. There were some molar teeth which it was utterly impossible to remove with the long bayonet-shaped forceps. He supposed that every dentist had worked out this problem for himself. Of course the beaks of all forceps should be shaped to grasp the roots as flatly as possible, and not like an incision or Parmlee forceps, which present opposing sharp edges of this character, and are intended to cut their way through. The short-jawed forceps he held in his hand, would either remove or break the firmest tooth it got hold of, while the long-jawed forceps was very apt to slip on the tooth and break, without removing it.

For bicuspid teeth of ordinary strength he used an instrument with the beak longer on the inner than on the outer side. For weak bicuspids, which were not very firm, a bayonet-shaped forceps, like the one exhibited, was very good. He believed there was great virtue here in a smooth beak sometimes.

With regard to the ordinary English-beaked lower forceps, the trouble was that it was very apt to split the roots asunder. In regard to the best way of extracting teeth when broken, his experience led him to believe that the best way often was not to extract the broken part that remained at all, but to wait until nature thrust it up, and then it could be taken out without trouble. If it would come out with a little amount of pain, why, let it come out; but if there was going to be much pain about it, as soon as the nerve and one of the roots were out, the better way was to let it alone. There is no excuse for grasping a tooth so that the nerve-pulp remains behind if the tooth break.

For the upper roots the ordinary elevator punch, with the point well bent backward on the shaft, was serviceable.

Dr. *Hurd* inquired if Dr. McIlroy ever used the compound elevator for wisdom teeth.

Dr. *McIlroy* replied in the affirmative, and said that the value of that instrument consisted in elevating the tooth in a circular line continuous with the form of the root.

He had to repeat, what he said on a former occasion, that the subject of extracting teeth was greatly neglected. To the minds of the public and of the profession, it was very much unappreciated. There was no surgical operation so underrated as the extraction of teeth, and the probability was that it was because it was such a common operation. The surgeon, in amputating a limb, had his patient, in these days, under the influence of chloroform, and was operating, so to speak, on an inert body. The dentist seldom had that advantage. The surgeon was paid a large fee, and operated perhaps once in a day. The dentist had but a small price, fifty cents to one dollar, for each operation, and had to repeat it frequently and sometimes hurriedly. There was no part of the profession which caused young men more mortification than failure in these operations, into which they were frequently led, before having sufficient experience, by a praiseworthy desire to relieve pain.

Dr. *Franklin* said that with regard to elevators, he had abandoned the use of all elevators with teeth in them at an early period, for those with a sharp, plain, chisel edge. The former kind were apt to plough out a groove and slip, while he found those with a chisel edge took a firm hold.

A few words on the preparation of patients. He was pleased with the observation, at a former meeting, that it was well to prepare the minds of patients for the operation. This ought always to be done; and whatever the case might be, the operator should tell his patient the *truth*, without hesitation or reservation. In extracting the shell of a tooth, it was important to impress on the patient the necessity of keeping a steady position, for the slightest movement would damage the operation. A great deal, in the success of drawing teeth, depended upon the easy position of the instrument in the hand. The moment the hand felt cramped, all control of the instrument was lost. He preferred having the instrument in the hand, the back of the hand down, and under the forceps instead of on top, as giving the greatest freedom. A circumstance which aided him very much was, that he was always enabled, by passing his finger over the gum, to tell which way the fangs of the tooth curved in the socket. By drawing a tooth in the direction of the curve, it came out with great ease, comparatively, while, by pressing it in the opposite direction, the root was likely to break, and much suffering inflicted on the patient.

Dr. *Allen* believed it important to draw teeth in a line with the curve of the root, and avoiding a pressure against the inflamed side. He acknowledged himself quite an advocate for elevators. He had used them for years with great advantage in extracting fangs or stumps. Still they were to be used with extreme caution, the arm resting firmly on the side of the body, so as to perfectly control the instrument. Many accidents had occurred from want of caution in this respect; but an instrument was not to be discarded because of carelessness on the part of some who used it. In reference to what Dr. McIlroy had said of the advantage of the short over the long beak, they should be careful, in avoiding one difficulty, not to run into another opposite. He had broken off many teeth by using a short-beaked forceps, which he would not have broken with a longer beak, for the reason that they did not go up on and embrace the tooth fully. Judgment in this, as in other things, should preside over the operation. In the case of a short, stump tooth, the short beak was best.

Dr. *Franklin* considered that the length of the beak had nothing to do with the leverage; it was the length of the whole instrument. The shortness of the beak gave a greater crushing force, but not a greater leverage. He preferred having the beak somewhat long, and properly tempered, so as to hold well on to the tooth, and there would hardly ever be a break.

Dr. *Stratton* said he had commenced, not as a dentist, but as a country physician, to extract teeth in 1826. In his saddle-bags he carried a turn-key, which, with a gum lancet, was the only instrument he had. In the introduction of forceps he found their superiority in many cases; but he agreed with the remark of some gentleman the other night, that he was not willing to give up the key altogether; for there were many cases where he had found they could not extract safely without the key. He gave an instance which occurred a short time since of the extraction of an eye tooth by means of the key, when every effort with the forceps had failed. Still, he very rarely used the turn-key—not perhaps four or five times in a year. He believed it was more pride than any thing else that prevented some densists from acknowledging the use of the key at all, because they thought it unprofessional. There was much judgment necessary in the extraction of teeth. The great difficulty among young beginners, and among old heads, too, was that they were in too great a hurry; and, without ascertaining which way the fangs ran, they commenced to pull the tooth out. The idea that it was well to calm the patient was a very proper one, when it could be done, and should not be neglected with persons of intelligence. But there was a class of persons whom it was vain work to try and pacify.

They would be excited and scream, no matter what was said, and the only way was to get over the job as quickly as possible. He had succeeded very well with children by gaining their confidence and not deceiving them.

Looking at the array of instruments this evening, he was reminded that when studying with Dr. McNiel he inquired of him how many pair of forceps would be necessary. Said the doctor, "You can get as many as you please, but seven, well selected, will be sufficient, with the aid of a turn-key." And so he found it. He supposed he had twenty-five pair of forceps that he had never extracted a tooth with. He recommended a swell in the handles, to fit the hollow of the hand. The English forceps he considered the very best for extracting lower molar teeth. The compound elevator he thought a very good instrument. Where stumps were to be extracted, he thought it best to take out all; but the number to be taken out at one sitting depended very much on the constitution of the patient. In respect to the length of the beak, he had never found any too long. He had one forceps for incisors, with a beak very short, and he had broken more teeth with that, until he threw it away, than he had with all the other instruments he used.

In reply to an inquiry from Dr. Roberts, Dr. Stratton said that he only used the English forceps when there was sufficient strength connecting the fangs to keep them together until the whole was raised from the socket. When the connection between the fangs was slight, he used an instrument to catch one fang, instead of taking both.

Dr. *Allen* made a suggestion which might prove useful. He had been in the habit of enveloping his instrument, when removing the lower teeth, with a handkerchief, to prevent a hard blow upon the upper teeth. Now could not some of the rubber manufacturers make sheaths that could be drawn over the instrument to the beak? There would be elasticity enough to permit a play of the joint.

Dr. *Roberts* said that the common rubber tubing would answer this purpose very well, but he thought the abandonment of the English forceps altogether preferable, as he considered it the most injurious instrument they had for extracting lower molars. When the tooth gave way, they were very apt to jerk up and injure the upper teeth, chipping off pieces. They were under the disadvantage of working at arm's length. It was the fact of having crushed and broken so many teeth with this instrument that had led him to make his improved forceps for lower molars and bicuspid teeth.

Dr. *Burras* had thought the chisel-edged elevator very effectual.

Dr. *Hurd* thought the use of the turn-key nearly altogether unnecessary, since the improvements in forceps. He considered the elevator a very valuable instrument.

After fixing on—1st, *Taking Impressions;* 2d, *Making Plaster Models;* 3d, *Making Metallic Dies and Swaging Plates*, as the subjects for discussion at next meeting, the Society adjourned.

FIRST PRIZE ESSAY.

EXTRACTING TEETH, AND THE INSTRUMENTS USED IN THE OPERATION.

By Abr. Robertson, D.D.S., M.D.

After premising that the operator thoroughly understands the anatomy of the teeth and jaws and their articulations, and that he knows, or at least can tell on examination, when a tooth should be extracted and when it should not—for without this knowledge and this ability no one ought ever presume to attempt to extract a tooth—the first requisite is the proper instruments. And of these, to be thoroughly prepared for all cases and emergencies, he should have at least three pairs of straight forceps, one pair of upper bicuspid forceps, two pairs of upper molar, one pair lower incisor, one pair lower bicuspid, and one pair of lower molar forceps; and a similar set of small molar forceps, and one pair of quite small straight forceps for children's teeth. He should also have two elevators and one gouge.

The first pair of straight forceps should be rather small, with delicate, evenly-tapered, well-tempered blades; their points finished down to sharp-cutting edges, and slightly rounded or gouge-shaped, so that they can be readily and easily carried under the gum, cutting their own way quite to, or, if necessary, even beyond the edge of the alveolus. The blades should also be set wide enough apart at the joint to allow their points to seize the neck of a tooth firmly without infringing upon and crushing its crown. Nor, to do this, should they be much if at all curved, but should rather approximate each other from their joint to their points in nearly straight lines, otherwise they act to some extent as excising forceps, and are very liable to break the tooth instead of extracting it. This kind of forceps is used chiefly for the extraction of ordinary upper incisors; and sometimes for the *roots* of every other class of teeth in the upper jaw. By their being made thin and sharp, as described, they can on occasion sometimes be inserted, and without much force, between the alveolar process and the root of a tooth, so as to secure a hold, and without inflicting pain, that could not be taken by a blunt, or by a serrate-pointed instrument.

The next pair should be of similar form and construction to those just described, but heavier and stronger, and are used in the extraction of the cuspidati and some of the larger and more firmly-set incisors.

The third pair should also be rather heavy and strong; a kind of semi-cutting forceps, intended especially for removing the roots of the incisors, cuspidati, and bicuspidati, when one has been so unfortunate as to break one of these teeth in attempting to extract it. The blades of this instrument are shaped very nearly like a carpenter's "pod bit" or gimlet, with sharp-cutting edges at their ends, and along their sides for about three eighths of an inch, and hollowed out about as deep as the thickness of the alveolar process, so that it may cut the process fully but without cutting the root of the tooth. Before applying this instrument the gum should be slit along the course of the fang to be removed, and dissected from the alveolar process enough to allow its easy application. It is applied over the process on each side of the root, and as far up as is deemed necessary—about the fourth of an inch usually—when with one stroke of the forceps the process on both sides is completely and smoothly cut through, and the root firmly seized at the same moment, which is then, of course, very easily removed, as its attachments are so nearly all cut away. There is no instrument that I have ever used with more satisfaction than this. It does, at one motion, smoothly, effectually, and with much greater ease to both patient and operator, all that can be done by tediously and roughly and painfully chipping away the alveolus with chisel and gouge and mallet, as is the practice of many.

In selecting, or having bicuspid forceps made, the same rule should be observed in relation to their fitting the teeth on which they are intended to be used. That is, that they shall seize their necks firmly without cutting them or crushing their crowns. The points of these forceps should also be made sharp, so that they will pass readily under the gums, cutting their way and not bruising it. Many of the forceps of this kind that are offered for sale are both too blunt and too much curved in their blades, so that they are bungling to apply, and when applied their bearing is too directly on their very points, making them act either as cutting forceps, or else allowing their handles to rotate on the point of the instrument until the crown of the tooth impinges on one blade of the instrument, while the point of the other blade acts as a fulcrum over which to break off the tooth.

Great care should also be used that the upper molar forceps—which should be rights and lefts—are well adapted to the class of teeth on which they are to be used, and also to the hand.

For the lower teeth, as already intimated, three—though lately I have added a fourth to my case, which I will by and by describe—pairs of forceps are all that are necessary. One pair for the incisors and cuspidati; one for the bicuspidati, and one pair for the first and second molars of both sides. Some use two pairs for the molars, rights and lefts, but one only is better. The only difference required between the forceps for the lower incisors and the lower bicuspidati is, that those for the incisors should be narrower in their blades than the others. Those made by Toland, Chevalier, and other makers are very well adapted to the purpose; though I like them better more bent in their joints than they are usually made, as when applied it brings the handles, and of course the hand, further from the patient's face. I will here remark, *en passant*, that when only one pair of forceps is used for the molars on both sides of the lower jaw, it should be the one made for the right side. The points of the blades or beaks of this kind of forceps should be made longer, more hooked and more pointed than they are usually found, so that they can be readily and certainly applied to the bifurcation of the roots of the teeth. Then there is no slipping, and very little danger of even breaking a tooth in attempting to extract it.

The fourth pair of forceps for the lower jaw, which I alluded to above, and promised to describe, was invented by myself about two years ago, and is intended for the removal of roots of such lower incisors, cuspidati, and bicuspidati as are unfortunately broken in attempting to extract. Their general form is the same as my ordinary lower bicuspid forceps, having the pod-bit or gimlet-shaped blades described for cutting the alveolar processes and removing the roots of broken upper teeth; and is used in the same manner as that instrument. I now find it an indispensable instrument, and can hardly understand how I got on so long without it, and I am sure that no one who had once used it, would consent to be without it.

Besides the forceps already described, it will be found very convenient for every dentist to have one or two pairs with very narrow, but at the same time very strong blades, for extracting irregular teeth. Several very good patterns of this kind can be found in most of the principal dental depots.

The forceps for deciduous teeth should have the same form as the corresponding instruments for adult teeth, but of only about half their size.

Of the elevators, one should be the common straight spear-shaped elevator of the depots, modified and greatly improved by having its head about one third smaller than they are usually made, and by its being bent back at an angle of fifteen or twenty degrees from its shaft. This greatly facilitates its application and adds much to its power. This instrument is sometimes very useful in extracting roots of teeth, but more especially for extracting the lower wisdom teeth. But of its use I shall speak more fully when treating of the extraction of the wisdom teeth.

The other elevator should be about five inches or a little less in length, including its handle, which should be round and well fitted to the hand; its blade about half an inch in length, set in an angle of full forty-five degrees from the line of its shaft, its point sharp and rounded, or gouge-shaped. This instrument is used chiefly in the extraction of the roots of teeth; and is applied by placing its concave side against the root to be removed, carrying it down perpendicularly, as far as practicable between the root and its alveolus, then depress the handle, thus using the edge of the process as a fulcrum over which to pry out the root, or else with an upward (if on the lower jaw, downward on the upper,) motion force or push the root from its socket. This elevator is more serviceable in the extraction of the roots of all classes of teeth than any other single instrument, or perhaps than all other instruments combined; and especially of very badly decayed frail roots. Its sharp, rounded point can readily be inserted some distance between the root of a tooth and its alveolus; at the same time rupturing, on the one side at least, its articulating membrane or periosteum, or peridenteum, as it is sometimes called, and securing a good hold upon the root, without danger of breaking or crushing it; all material advantages, both in its application and use, over either the forceps or the serrated or bifurcated points of the elevators as usually made.

The gouge should be, including its handle, about six inches in length, three sixteenths of an inch in width, and shaped like the *Turner's* gouge.

This is used for the removal of the roots of teeth that are decayed or broken off high up in their sockets. It is generally applicable only to the upper jaw. It is applied by passing it up the cell of the alveolus until it reaches the root, and then carefully inserting its edge between it and the parietes of its cell, then with a gentle pressure and a rotary motion of the instrument, the root is at once and easily removed, and with comparatively little pain to the patient. In this manner I have removed the point of the root of a cuspid tooth, not more than three sixteenths of an inch in length, and broken off full three eighths of an inch above the edge of the alveolus; where, of course, no other instrument could possibly reach it without first cutting away at least half an inch from the alveolus. This is truly a very valuable little instrument; and no extracting case should be considered fully equipped without it.

Having described the necessary, and, as I think, the most appropriate, the best, instruments for extracting teeth, we will now consider the mode of using them. But as a preliminary to that, I will remark, that proper success in extracting teeth depends very much on the manner of the operator. He should, first of all, not only seem to be, but be, calm and self-possessed. This is the readiest way of securing the confidence and self-possession of the patient; and that, especially in difficult cases, is a very important consideration. A patient that is excited, or that lacks confidence in the operator, is far more likely to be restless, to jerk about the head, and throw up the hands, and seize those of the operator, and thus break off teeth that otherwise need not be broken, than if calm and confident. Undue anxiety to operate and to do it quickly, or apparent want of confidence of the operator in his own ability, excite suspicion and dread, or disgust and want of confidence on the part of the patient, all of which operate sadly against the success and the reputation of the operator.

I will here further premise that no man ought ever to attempt to extract any tooth without first making a careful preliminary examination of the case. First, to satisfy *himself* whether the tooth ought to be extracted. Patients often fancy that they ought to have teeth taken out and artificial ones inserted in their stead that ought not to be taken out, and those suffering from toothache are often deceived in relation to the tooth that causes the pain. Woful mistakes are therefore frequently committed for want of such examinations. Secondly, after being satisfied of the necessity of the operation, the tooth to be extracted should be carefully examined in regard to its strength, its position, the instrument or instruments most appropriate to be used, and the best manner of using them.

These preliminaries having been gone through, suppose the tooth requiring extraction to be a superior central incisor, the common straight forceps, of the size and strength suited to the size and strength of the tooth should be taken (no more instruments ever being displayed than are necessary for the performance of the operation in hand); then standing on the right side, and a little in advance of the patient—the left arm closely surrounding the patient's head, thus giving it a firm support; the palm of the hand resting on the patient's left cheek, and the fingers opening and protecting the lips—apply the blades of the forceps over the tooth, with their points at the edge of the gum; close them lightly upon the tooth, and carry them up firmly and decidedly till their progress is stopped by the edge of the alveolar process; then close them firmly upon the neck of the tooth, and give one or two rotary motions, back and forth, sufficient to sever the periosteum, and then a slight tractile force is sufficient to remove the tooth. As the roots of these teeth are nearly or quite round, the rotary motion ruptures their articulating membranes more readily than any other. I will here remark, once for all, efforts at extracting this or any other class of teeth should be made firmly and *deliberately.* All quick or jerking motions produce unnecessary shock and alarm to the patient, and greatly endanger the breaking of the teeth, especially if they are badly decayed and frail. For extracting the lateral upper incisors, and indeed for all other teeth in the upper jaw as well as all the teeth in the lower jaw, when forceps are used, except the incisors, cuspids, and bicuspidati on the left side of the lower jaw, the relative position of patient and operator should be essentially the same as for the extraction of the central upper incisors. The same forceps should also generally be used for the lateral as for the central incisors, but selected with reference to their adaptation to the width of the tooth, and applied in the same manner; but as the roots of these teeth are generally more or less flattened on their "approximal" sides, a motion forward and backward will generally succeed better in loosening them than the rotary.

The cuspidati, for their removal, require the use of the strongest straight forceps, which are to be applied in the same manner as already described; but as the roots of these teeth vary very much in their form, sometimes being quite round and sometimes very much flattened, the approximate motion, whether rotary or forward and backward, must depend on that circumstance, and can generally be determined by a careful examination. But when an examination does not determine their form, it must be decided by trial; and in such cases it is perhaps best, usually, to try the rotary motion first, and if that does not succeed, then the other. The roots of these teeth being larger and longer than those of the incisors, it generally requires more force to remove them.

For extracting the bicuspidati the forceps described as suited to those teeth should be taken, and placed, whether for the right or left side of the mouth, with the longest blade of the instrument toward the inside of the mouth, carried well up, quite to the alveolus, and the motion should be very steady, firm, and gradual, first to and from the operator—in the direction across the mouth—then a tractile force. These teeth, and especially without this care, are more apt to be broken, in attempting to extract them, than any other class. One great reason for this, however, is that the forceps generally in use for extracting these teeth are both too stiff and too much curved in their blades, so that they do not spring in the least, and bear too entirely on their points, thus acting almost like cutting forceps, as noted in the description of this kind of forceps.

In extracting the first and second upper molars, as they have each three roots—two on the outer and one on the inner side—two pairs of forceps are required, one pair for each side of the mouth, the blades of which should be well fitted to the peculiar form of this class of teeth. They should be applied like those for the bicuspidati, with the longer blade on the inside of the mouth. This blade should be forced to the edge of the process, and the outer or pointed blade should be forced even a little *under* the edge of the process, so that its centre point shall fairly enter the bifurcation of the roots of the tooth. The motions should then be forward and backward and tractile, the same as in extracting the bicuspidati.

For the wisdom teeth on this jaw the forceps should be applied in the same manner, and with great care. A smaller pair of forceps than the common molar forceps usually answer best. (I generally use my children's forceps for these teeth.) And from the form of these teeth, they being usually more or less curved—the crown and apex of the root both looking toward the cheek—the motion and force are required mostly from within, or from the palatine side of the mouth outward.

In extracting most of the teeth from the lower jaw, as already remarked, the position of the parties should be essentially the same as before described, but with this modification, instead of the left hand of the operator resting upon his patient's left cheek, its three last fingers should firmly grasp the patient's chin, while the forefinger and thumb are used to remove and protect the lips and tongue. If it is either of the incisors, cuspidatus, or bicuspidati on the right side of the lower jaw that is to be extracted, I take the instrument already described as suited to the tooth, place it upon the tooth with its longest blade on its inner side, force it down fully to the alveolus, and then, with an inward and outward and upward motion, the tooth is usually readily removed.

In extracting the molar teeth from the right side of the mouth, the longer or *upper* blade should be placed next the tongue, care being used to so place it and to force it down, that when closed its points shall fairly enter the bifurcation of the roots of the tooth; then with a firm, steady motion forward and backward—across the mouth—and proper tractile force, the tooth is usually with certainty easily removed.

In extracting the molars from the left side of the mouth, the same instrument is used, but the *shorter* or lower blade must then come next to the tongue, and a large portion of the instrument within the mouth. After it is applied, the force is to be used in the same manner as on the other side.

In extracting the incisors, cuspidatus, and bicuspidati of the left side, I stand nearly in front of my patient, grasping the chin by placing the fingers under it, with the thumb in the mouth, and resting on the teeth of the right side of the mouth. Apply the instrument and exert the force the same as on the other side. It will be observed, that in my directions for the application of forceps, I frequently repeat that they should be carried quite to, or even under the edge of the alveolar process. This I do of design. I wish to impress the direction emphatically; for when a tooth is not seized high enough, or low enough, as the case may be—that is to say, if it is seized by its crown, it is almost sure to be broken and not extracted. This should ever be borne in mind, and never forgotten whenever forceps are used.

The wisdom teeth in the lower jaw are almost, if not quite, without exception more or less curved or hook-shaped, thus forming nearly the segment of a circle, larger or smaller; or sometimes the root stands almost at an angle little less than a right angle to its crown; and its apex or foramen always looking backward or toward the ramus of the jaw. The crown of the tooth is usually short and its neck very short. The tooth being in the posterior part of the mouth, the space there between the jaws is frequently so small that it is difficult fairly to grasp it with the forceps. The jaw is here wide and flat on its top, with almost no process, so that the points of the forceps cannot be inserted into the bifurcation of its roots—if indeed its roots are bifurcated, which in a very large share of them they are not—but can at most only seize the tooth on the two sharp points of the instrument just at the base of its crown, where but a slight force is sure to break it off without removing the roots. It is clear, too, from the shape and situation of these teeth, that if the forceps could be ever so well applied, it would be impossible to exert a force in the direction necessary to remove them easily; as from their situation the force must almost necessarily be forward and outward, one which must make the crown of the tooth operated on impinge strongly on the crown of the second molar (if that tooth is still in its place), and the curved or hook-shaped roots simply inclining to burst up the bone behind and above it, or to break the tooth. I, therefore, in removing this class of teeth, if the second molar is still in its place, always use the straight elevator (modified as described), by inserting its point firmly between the necks of the tooth to be removed and of the second molar, using that and the alveolus as a fulcrum over which to pry out the tooth. This, it will readily be perceived, exerts a force in the exact direction most directly to overcome all resistance; or, in other words, in that direction that requires the least force to effect the object desired.

With this instrument, too, a lower wisdom tooth can quite readily be removed when from abscess or other cause the face is swelled, and the jaws closed to any extent short of absolute occlusion.

The position to be assumed when using this instrument on the left side, is the same as in using the forceps for the left lower incisors and bicuspidati. On the right side of the same as for the use of the forceps on that side.

If the second molar has already been removed, I sometimes use the other elevator described in the same manner as if it were the root of a tooth only. Sometimes other means must be resorted to, according to the emergencies of the case. With the necessary anatomical knowledge; with sufficient experience to acquire self-confidence; with the instruments here described, and the instruments used as here directed, little difficulty need ever be apprehended in the extraction of almost any tooth. True, some extraordinary cases will require extraordinary means. Sometimes splitting forceps may even be necessary; but I do not recollect having used mine for at least five or six years.

SECOND PRIZE ESSAY.

ON MAKING DIES AND SWAGING PLATES.

By F. Y. Clark.

In making dies, we use an impression-cup and material for taking impressions that will stand the necessary amount of heat for obtaining a die, by pouring the metal directly into the impression. This we do by having our cups made of brass, and using equal parts of plaster and spar for impressions. Our mode of procedure in taking impressions with this batter is about the same as in the use of plaster alone, therefore the rules laid down for one will apply equally well to the other. After securing an impression as above, we place it in flask No. 1, as below, and with a spatula or table knife, fill up the space between the impression and flask with batter the same as used for the impression. When this is done, it will present the following appearance. We next place the impression and flask thus prepared in our little gas oven, and apply heat sufficient to drive off all moisture nearly by the time the metal (if we use zinc*) is melted. When this is done, we then set the

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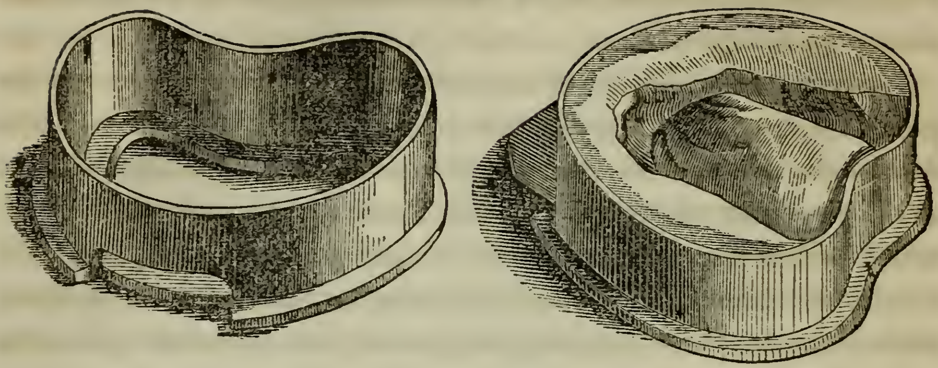
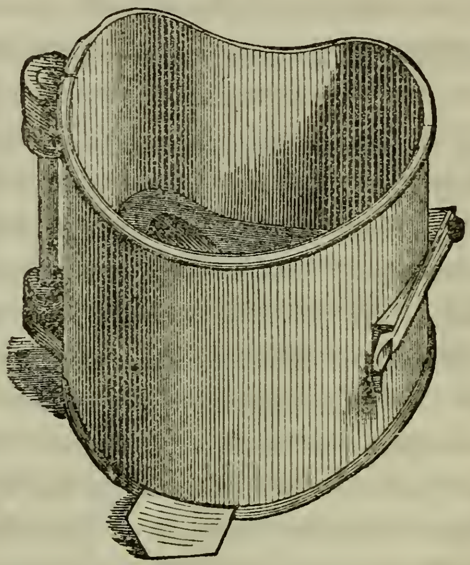
* Zinc should always be melted at a slow or gradually increasing heat, otherwise if heated to a red or burning heat, it will become brittle. We also consider it equally important to give it sufficient time to cool.

No. 1.



flask containing the impression on an anvil, and place flask No. 2 over it as here seen. Then pour in the metal, reserving enough in the ladle to fill up the centre of the die, as it settles, to a button shape. After a little we unclasp flask No. 2, and, by gently tapping the die at several

No. 2.



points, remove it without harm to the impression, so that a second or even third die can be taken from the same impression. In case the metal does not come away without harm to the impression, as is now and then the case, we do not mind it much, as we are sure of one perfect die, and can, if need be, make a swaging die by simply placing the female cast in flask No. 2, and pouring tin into it.

In making our female dies, we set flask No. 2 inverted on our anvil, and then place the die as above taken in it, face upward, and pour the metal in on the die. As a general thing, we construct our dies from pure zinc, although now and then we use tin or fusible metal; our female casts we make sometimes of lead, but generally of lead and tin, one third of the latter and two thirds of the former. We are not governed by any one rule, but always try and operate to suit the case in hand. If we have a plain, even case, we get along with one good set of dies; but in rough, uneven cases, and when we use a thick plate, we want two and sometimes three sets. For fractional sets, as we seldom use clasps, we fill up nearly all of each cavity made by the natural teeth in the impression, only leaving enough of their necks to enable us to fit the plate nicely around or up to them. Where there is deep undercutting, we construct our die so that every time it is struck it will force the counter die up into the undercut instead of spreading it out. This is easily done by trimming the impression in front of the depression while in flask No. 1, so that the outer edge of the die in front of the undercut will be higher than next to the alveolus. It will be seen that by this method varnishing and oiling impressions, taking and trimming casts, moulding in sand, etc., is done away with; and as nothing is necessary preparatory to taking a die but placing the impression in flask No. 1, as directed, of course two thirds of theusual time and labor are saved, and the die being taken directly from the impression, it must be more perfect than when so many changes are encountered. Begging pardon for this slight digression, we will now as briefly as possible describe our manner of swaging.

We place the plate, one or two sizes larger than the case requires, over one of our dies, if we have more than one, and by repeated blows with a suitable mallet, drive it well up into the palatial arch, and then with our bench-clamp fasten the plate and die to the bench, and with the mallet, as before, drive the edges over the alveolus. We next anneal and place the plate between our swages, and by careful blows, now and then removing to anneal, trim, and remove wrinkles and particles of metal, succeed in getting it up, so that little else is required of the reserved dies, more than giving it the set. Our rule is to have the plate fit the last die, so that the pressure of the thumb or finger on any part will not cause the opposite part to move. In doing this, we sometimes have trouble; but generally, by the aid of good gold, frequent annealing, and even blows, get along very satisfactorily. In fitting around cavities and in little pits, we depend as much on our little ivory or vulcanized drivers as on our swages.

By binding the plate and die to the bench with the bench-clamp, these little drivers can be used to great advantage. Where there is much depression or undercutting in front, we are not in the habit of cutting or lapping our plate, but by constructing our die as before mentioned, and a little extra time and patience, force it up. Where there is so much undercutting in front, connected with other unevenness, as to preclude the possibility of removing the plate after it has been properly fitted to the die, we have recently been in the habit of melting the die away from the plate.

ANÆSTHESIA.

Mr. Editor:—In the great interest which is excited whenever the subject of Anæsthesia, by inhalation of ether, chloroform, etc., is mentioned, the mind naturally adverts to the question, Who was its discoverer? And as you have occupied a portion of your last number with the report of a committee, presented to the New York State Medical Society last winter, which argues very earnestly that the credit of the discovery of the anæsthetic power of certain substances, when inhaled, belongs solely to the late Dr. Horace Wells, of Hartford, I desire to make a few comments upon the general subject.

In the tripartite controversy which has been waged between Drs. Morton, Jackson, and Wells, there are several elements of dispute. Each claims for himself a certain merit. Morton claims that he had long been in pursuit of an anæsthetic agent, and made the first experiment with sulphuric ether in September, 1846, and then proved its peculiar property. Jackson's claim is, that as far back as 1842, he had neutralized and destroyed the deleterious effects of noxious gases by inhaling sulphuric ether, producing temporary insensibility thereby, and that it was he who first suggested to Morton to try it upon some of his dental patients, which he accordingly did, as above stated, in 1846; while Wells asserts and, I think, *proves*, that he put in practice the use of nitrous oxide as an anæsthetic, in 1844. If, then, the question is asked, Which of *these three* first practised anæsthesia in their surgical operations? manifestly it must be answered, *Dr. Wells*. For, admitting as correct, the statement of Jackson, that he suggested to Morton to try ether, the suggestion was not made till two years after Wells's experiments, and Morton himself makes no claim to the discovery prior to 1846. Whatever, therefore, may be the grounds upon which Jackson and Morton base their claims as discoverers, it seems clear that Wells has a clear priority of *date*, so far as the points in controversy go. Wells used nitrous oxide gas, an inconvenient but successful article, which, had ether possessed no such property, would *now* be used for producing anæsthesia, in all surgical operations where it could be made available. But the discovery of this property in ether has completely thrown out the nitrous oxide from use, because of its greater convenience and facility of management and application. To Dr. Wells, then, I believe, in all fairness, must be allowed the credit of being the *first of these three* to have applied anæsthesia in the performance of surgical operations.

But the report alluded to goes altogether too far, in my judgment, when it claims for Dr. Wells, that he was the first "to have established the great fact, never before established, never undertaken to be established, by any man, that the human system could be rendered, through a process of inhalation of a certain chemical substance, insensible to pain under severe surgical operations," and "to have done this by means of nitrous oxide gas." It was, probably, before Dr. Wells was born, that the fact was established that this gas had the effect of producing insensibility to pain from wounds, blows, etc. It was a patent fact as early as the time of Sir Humphrey Davy, to whom belongs the credit of having first proved this gas to be respirable. Reasoning from his knowledge of its chemical composition, that it must be a supporter of animal life, he undertook to prove it in his own person, by the then deemed rash act of inhaling several quarts of it. Subsequently to that, it is well known to have been a common thing in lecture halls and exhibitions to administer this gas as an entertainment; and, although the effect upon the thousands who have inhaled it was various, most being stimulated to a high degree of nervous and muscular energy, yet in some its anæsthetic influence was clearly demonstrated, in the insensibility to knocks and blows which, in their novel condition, the parties received. This effect was not then *called* anæsthesia, nor was its applicability to surgery or dentistry thought of, as far as is known, until Dr. Wells promulgated the idea, yet the fact is undeniable. It is well known that its effects are not always the same, and that its anæsthetic property is by no means invariably manifested; on the contrary, from my own observation of its influence on others, in very numerous instances, when administering it on several occasions while an assistant in the most popular chemical lecture hall in this city in former days, I am convinced that its exhilarating and exciting influence was far more frequently exhibited than its soporific powers. In rare instances only did it have the effect of subduing the muscular energy, and completely suspending the sensibility of the nervous system. But to the latter result of its inhalation I am able to bear personal testimony, having experienced it to its full extent, at a period as far back as over thirty years. Although the exhibitions of "Exhilarating Gas" were quite common in those days, there prevailed a general, though very vague, idea of its injurious effects, and I was either not permitted or declined to inhale it myself in the halls where I was wont to aid in its administration to others, but embraced an opportunity when it was exhibited at another place to try its effects upon myself. This was at the house of George Chilton, a distinguished chemist (father of the present well-known analytical chemist) who then resided in Park Row, on the site of Lovejoy's hotel. On that occasion I was thoroughly *anæsthesiated*, so that I have no doubt my leg might have been amputated without my feeling it. I have since been under the influence of both ether and chloroform, and the resulting condition was, as well as I can remember, precisely the same as that from nitrous oxide. It wanted but the observant mind of a Wells at the time to draw the inference which he did on the occasion alluded to in the "report," when in 1844 he saw a young man under the influence of the gas abrade the skin of his leg, with a "profuse flow of blood," without being sensible of it. But though he did not discover the fact, his was the happy inference from that observation, that it might be useful if applied for the direct purpose of subduing sensibility—an inference which he as happily put to practice. But to Jackson, if his statements are to be received, and we know not why they should be discredited, is due the idea of suggesting the possibility of anæsthesia by ether, while Morton has the credit of having put it to proof and reduced it to practice.

There are, however, others to whom we must not omit to award great credit for ingenuity in the furtherance, amounting almost to originality, of this last and greatest boon to humanity. And first of all to Prof. Simpson, of Edinburgh, who, seizing at once upon the strange, yet blessed idea, cast his eyes around for whatever other article there might be in which the same wonderful property might exist. After trial of numerous substances, guided by his sagacity and knowledge of the composition of substances of the same chemical class, and proving them upon his own person, he lighted upon chloroform, which at once took, and to a great extent yet continues to hold, the place of ether. If to Morse is due renown for applying to practical use the discovery of Franklin, then to Simpson is due an equal degree of credit for proving the value of the before almost useless chloroform. Following him were other ingenious men, who sought to extend the list of anæsthetic agents, among whom must be mentioned as the most prominent, Dr. Snow, of London, with Amylene; but thus far the palm of greatest ingenuity must, in my opinion, be yielded to Sir Humphrey Davy and Prof. Simpson, the former the *Franklin* and the latter the *Morse* of this new and wonderful field of science.

I have thrown out these thoughts, Mr. Editor, not for the purpose of detracting one iota from the credit justly due to either of the other individuals named in connection with this subject; for it cannot be denied that the world of humanity for all future time will owe them all a debt of gratitude which it cannot liquidate; but that we should not, in the discussion, forget the names of others to whom we owe, in one respect almost as much, and in another sense far more, for their science and ingenuity, and especially for their daring bravery, in submitting their own persons to the proof of their judgment.

What one class of these noble minds performed by the ingenious application of a discovery, rather accidental than otherwise, the others developed by the application of their reasoning faculties to the scientific knowledge acquired through long and arduous study.

J. H. G.

NEW YORK, December, 1860.

EDITORIALS AND CUTTINGS.

VULCANITE AND ITS VICTIMS.

When we assumed the publication of the "New York Dental Journal," it was with the determination not to enter into any controversy either with individuals or with publishers of Dental Journals, unless our duty to the profession seemed to demand from us such a sacrifice of our personal wishes. The fact of there appearing to be such a necessity at the present juncture, is the only apology we have to offer to our readers for occupying their time by some remarks in reference to an article published in the November number of an advertising pamphlet, published by a manufacturing company, and edited (?) and engineered by an ex-member of the profession. Heretofore we have taken no notice of the various threats and assertions made by this company and in the "advertising pamphlet" aforesaid, simply because the matter in question did not interest us, and we supposed the profession were capable of seeing through such transparent devices for ensnaring the unwary. But in the number above-mentioned, we find the name of Roberts so pertinaciously and incorrectly thrust into the question, that we feel it a duty we owe to ourselves and the profession to give some little account of what *we* know about the origin, progress, and vicissitudes of the article known under the title of *Vulcanite Base*.

About four years ago, this article was first introduced to the notice of the profession and the public by Dr. C. S. Putnam, then of this city, and now of Paris, France. Dr. Putnam had made an arrangement with the American Hard Rubber Company, by which he owned a one half interest in the patent right for New York city, and no one could *use* the article for dental work unless it was vulcanized by him. While Dr. Putnam thus held the monopoly of the article in New York, he charged for each piece vulcanized by him the sum of five dollars.

About two years ago a substance called "*Coralite*" was introduced in opposition to the "*Vulcanite*," and became immediately popular from the more liberal manner in which its introduction was conducted; the A. H. R. Co. immediately reduced their charges for vulcanizing to two dollars per case, in hopes that this would bring a reaction; but it did not. Matters looked blue at the *Vulcanite* office, and on the principle that desperate diseases require desperate remedies, a suit was commenced at once against the owners of the *Coralite*, the A. H. R. Co. having first ascertained that the *Coralite* people were not remarkably well supplied with the means to carry on expensive lawsuits with wealthy manufacturing companies. *But* the *Coralite* gentlemen were just as well aware of this fact as the A. H. R. Co., and, considering discretion the better part of valor, and that "he who fights and runs away, lives to fight another day," and several similar aphorisms, they let the case go by default, and transferred their interest to E. A. L. Roberts, against whom the A. H. R. Co. immediately brought a second suit. Mr. Roberts prepared for trial, but the case was adjourned from time to time for nearly a year. During this time several unsuccessful attempts were made by the company to put an injunction on Roberts: the professional interest was awakened, and it began to be suspected that the *Vulcanite base* was not as firmly *based* as had been thought. The consequence was a complete cessation of the sale of rights, and a decided weakening of the position taken by the A. H. R. Co., viz.: *the right of monopoly at extravagant prices.*

It now became evident to Mr. Roberts that the expense to him of the forthcoming suit would not be less than $2000. Meanwhile, by the production of his *vulcanizer*—which simplified the process so that it could now be conducted by any dentist in his own laboratory—Mr. Roberts had entirely killed his own business of vulcanizing, and finding he could make nothing by defending the suit, was, of course, averse to taking a course by which, even if successful, he could gain nothing. While he was in this state of mind, a proposition was made to compromise the matter—Mr. Roberts confessing judgment, paying the A. H. R. Co. $200, and receiving an office-right, and a clearance of the judgment, the Company to pay all their own costs. Mr. Roberts, however, thought that he would prefer having $100 to an office-right which could be of no earthly use to him, and therefore made the suggestion; it was accepted, and the compromise, as amended, was entered into, signed, sealed and delivered, as aforesaid, the various assertions of the A. H. R. Co. to the contrary notwithstanding. The following receipt was given to Roberts:—

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.
N. B. GOODYEAR as administrator, etc., *vs.* E. A. L. ROBERTS.
CHARLES GOODYEAR *vs.* E. A. L. ROBERTS.

Received, New York, April 3d, 1860, of S. D. Law, Esq., one hundred dollars in full for damages and costs in each of the above-entitled suits, and such suits are hereby discontinued.
GEO. D. SARGEANT,
$100. *Attorney for the above-named Plaintiff.*

No sooner had this compromise been effected than the A. H. R. Co. issued the following circular:—

TO THE DENTAL PROFESSION.

THE QUESTION SETTLED.

THE case of Goodyear *vs.* E. A. L. Roberts & Co., which has for so long a time engaged the attention of the dental profession, has been decided in favor of the plaintiff, and the following decree has been issued by the Circuit Court of the United States:—

United States Circuit Court.

SOUTHERN DISTRICT OF NEW YORK,

IN EQUITY.

Between
HENRY B. GOODYEAR, as administrator on the Estate of N. GOODYEAR, deceased,
Complainant.
vs.
EDWARD A. L. ROBERTS,
Defendant.

It appearing to the satisfaction of this court, that the said defendant has infringed the rights secured to the complainant by letters patent, re-issued to him on the 18th day of May, A. D. 1858, numbered re-issues Nos. 556 and 557. Now, on motion of George D. Sargeant, complainant's solicitor, it is hereby ordered, adjudged, and decreed, that a perpetual injunction do issue out of and under the seal of this court, restraining and enjoining the said defendant, Edward A. L. Roberts, his clerks, attorneys, agents, servants, and workmen, from making, manufacturing, and selling to others any plates and bases for artificial teeth or other articles which are made and manufactured of india rubber or other vulcanizable gum, mixed with sulphur or any equivalent therefor, either with or without auxiliary ingredients, in the proportion of about from four ounces to a pound of sulphur to a pound of gum, and then subjecting such mixture of india rubber, or other vulcanizable gum or sulphur, or any equivalent therefor, to high degree of artificial heat, substantially as described and claimed in the letters patent as aforesaid.

And it is further ordered, adjudged, and decreed, that the cause be referred to Kenneth G. White, Esq., the clerk of this court, to ascertain and report the numbers of plates and bases for artificial teeth, or other articles, that have been manufactured and made according to the process patented as aforesaid; and also the number sold by the said defendant since the 18th day of May, 1858, and also the profits which the said defendant has made or derived by the sale of said articles, so made and manufactured as aforesaid, since the time last aforesaid; and upon the coming in and confirmation of said report, that said complainant have a deceee and execution for the amount found due to him, and also for the costs in the suit to be taxed.

Dated, NEW YORK, *October 3d*, 1859.

A true copy,

KENNETH G. WHITE, *Clerk.*

A judgment also has been entered in the said court in favor of Charles Goodyear against E. A. L. Roberts & Co., confirming the right of the former to his patent for the use of PLASTER MOULDS in vulcanizing preparations of india rubber, GUTTA PERCHA, or OTHER GUMS.

This circular was intended to convey the idea that whoever vulcanized thereafter without purchasing an office-right, laid themselves open to prosecution for infringement, as the judgment given in the Roberts case had decided the validity of the patent. It will be instructive to compare these assertions made by the A. H. R. Co. with the *actual facts* in the case, as we have stated them above. What we desire to show, and what we have shown, is simply this, that *as far as the case of the A. H. R. Co.* vs. *Roberts is concerned*, the profession have a perfect right to vulcanize their work to all eternity, without buying an office-right or having the slightest connection with the A. H. R. Co., their agents, trumpeters, engineers, or fuglemen.

We do not think that the action of the A. H. R. Co., in forcing their office-rights on the profession, immediately after issuing this circular, and in the face of the facts which we have given, exhibits great confidence in the strength of their own position; and their vacillatory policy in changing their prices for vulcanizing from five dollars to fifty cents and back again, is an evidence of any thing but stability.

Now, we have no objection to patent rights *per se*, but when we find a wealthy company trying to crowd office-rights on the profession, under threat of expensive lawsuits, which, they say, dentists are too poor to defend, for a composition which may at any moment be superseded in the public mind, and when their own patent has but four years to run, and, withal, at the exorbitant price of $100 per right; we would use our best influence to prevent such extortion if the article in question were capable of the complete moral regeneration of mankind.

And we would ask our readers to compare this price ($100) with the offer of Dr. John Allen for rights to manufacture *continuous gum work*, an invention whose value and importance to the profession as far exceed that of the vulcanite as the liberality of the one proposition is more worthy and more honorable than the meanness of the other. The *continuous gum* patent had *twelve* years to run, and its superiority was acknowledged by the voice of the whole profession—yet $100 was the only price ever asked for rights.

But although the A. H. R. Co. thus sought to mislead the profession as to the true termination of the Roberts suit, there was one who was not ready to receive as gospel their assertions. Mr. John T. Toland, of Cincinnati, preferred to apply at head-quarters, where he soon learned the true state of things, and presently laid them before the public in his journal. This prompt action on the part of Mr. Toland had the effect to materially interfere with the sale of rights, and the necessary consequence thereof was a suit brought against him by the

A. H. R. Co for infringement. We shall leave Mr. Toland and the Company to settle their difficulty in their own way, and if settled in Mr. Toland's favor (that is, if he sustains the suit and gains it), we shall authorize Mr. Toland to draw on us for $100, the price of a right, and shall also send him the names of a few others who are willing to bear the same share in the expenses, without having money to throw away foolishly, they will hold it a privilege to give that amount to sustain the principle of right.

For our part, we do not see why the profession should not sustain Mr. Toland or any other one in his position, with the same propriety that they sustained *Potter* in the *Gilbert's Air Chamber* suit; there are many points wherein the two cases are parallel.

Now, in looking over the list of parties who have purchased rights, published in the Company's "advertising pamphlet," we find about three hundred names out of some five thousand dentists in the United States; and out of these three hundred only FOUR are citizens of New York city. This proves one fact which all the *rubber* in the Company never can rub out; which is that *here* the profession is too well posted to fall into the snares of the A. H. R. Co. But unhappily, the hobgoblin which assumes its true shape of a pumpkin-head, candle, broomstick, and sheet, when faced boldly; bears a very frightful appearance when looked at askance from a distance; and our country friends have thus been induced, not knowing the facts of the case—frightened by the bullying threats of a moneyed monopoly—to pay their $100, "and rather bear those ills they have, than fly to others that they know not of." Whether the *four* city dentists have *paid* their $100 each, is not known to us; perhaps *one* of them receives his "right" as compensation for his able performance of the duties of fugleman in ordinary to the Company, and bear-leader to its agent.

This question, among its various fantastic shapes, sometimes assumes, in our mind, the form of a *theatrical performance.*

The theatre has its stage, its orchestra, its actors, its prompter, its scene-shifters, its "*traps,*" its "*flats,*" and finally its "*green-room,*" and "*stage manager.*"

The question we are examining has each and all of these adjuncts.

The play is a serio-comical, spectacular, pantomimic, melo-drama, entitled, "THE VULCANITE BASE *vs.* THE BASE VULCANITE." The audience is the dental profession. Now, if we could only get into the green-room of this theatre while the play is being performed, we could see for ourselves how all the machinery is worked—how the hobgoblin suddenly disappears when you go to cut his head off. We should see the stage manager sliding on a "continuous gum" scene at one moment, and the next replacing it with a "rubber *flat.*" We should understand why the drummer in the orchestra made such a row with his drumsticks, drowning all the other instruments. We should have understood all this if we had been admitted to the *green-room;* but being merely spectators, we could only conjecture as to the truth or falsity of the representations. True, we *were* once behind the scenes for a little while in the second act, when the call-boy called *Roberts* on the stage; and we have laid our information, gained on that occasion, to good purpose. But we wonder now whether some of the audience who have got in are not *dead-heads.* We cannot help fancying they are, and that in place of paying $100, they have written a puffing letter, to be used as advertisement by the stage manager, and so got a *season ticket.* We even fancy that among the "properties" we should find a *dummy* ROBERTS, which the Company have been foisting on the public, when the genuine actor was quite another sort of character. Finally, in these "perilous" times, we have become so suspicious, that we even fancy we might discover, when the curtain rises again, the burly figure and jolly face of TOLAND among the actors, thus:

The celebrated Star Actor,

MR. JOHN T. TOLAND,

will appear in the new Comedy in Three Acts and several Tableaux,
entitled

THE DECOY DUCK; OR, RUBBER AND ROPES.

To be continued.

RED OXIDE OF MERCURY *vs.* BI-SULPHURET OF MERCURY.

At the American Dental Convention held at Saratoga last August, the agent of the American Hard Rubber Co. took occasion to say "that, by analysis it has been found that after vulcanizing, there can be no sulphur discovered in this composition" (meaning hard rubber); also, "with this compound you could accomplish more than with any other substance, either alone or in combination with metal, continuous gum work, or any thing else."

Now we like impudence when it is carried out with plausibility, but an untruth we cannot excuse except it be told in good faith; sometimes people tell a falsehood through ignorance, and are not aware of it, and sometimes a person might be paid a salary for puffing an article, and get so much absorbed in his theme as to repeat that which was false so often as to really think it was true. As we were aware that the vulcanite base *did* contain sulphur, and that after being vulcanized the crystal sulphur could be recovered, we did not concur with the gentleman's statement; neither could we agree with him as to its being the best article used for dental purposes, as its component parts did not indicate that purity which was found in the continuous gum work, and which it would seem to require for use in the human mouth. We also stated that we had been informed that the red oxide of mercury was used in the coloring material. It would seem from the spirit of the advertising sheet which he has the honor of editing, that we incurred his displeasure as well as that of those for whom he acts. Now we would say to him and all who feel an interest in this new compound, that our remarks were made in good faith, to draw out from the more learned in the profession the truth in regard to this compound; and if it was or should prove to be what its friends claim for it, why, let us all know it. A false representation of an article that must stand or fall on its own merits cannot do it any possible good, whereas the truth might. It may be that this composition, when mixed and vulcanized, may undergo such chemical change as to render it perfectly healthy, and safe to insert in any one's mouth. Therefore, let the truth be fairly stated, and let every one who uses it watch carefully its workings; by such a course we, as a profession, will be able to get at valuable facts. It is for our own interest to have it used extensively, as we have been for a long time investing money to perfect the most approved styles of teeth for its use, but we shall never allow such an interest to deter us from placing before the profession, at all times, truths that may be of service to them.

In the November number of the paper referred to above, he says, "vermilion is used as a coloring for the rubber, and if Dr. Roberts really desires information, he can find it by consulting URE; he will there find instead of the *red oxide* of mercury, it is the *bi-sulphuret* of mercury that is used, and he will also find "on exposure to a moderate heat, it evaporates without leaving a residuum." It would seem to those reading the above, that after the vulcanizing there would be no coloring matter left in the rubber composition, and that it would be impossible for the bi-sulphuret of mercury to leave any trace of mercury. We presume this to be his meaning. We cannot see it in this light, reasoning from common sense alone without the aid of chemical facts; as the mercury contained in the vermilion, combined with the sulphur, produces the red color seen in the vulcanite base, if it passed off under *the moderate heat* necessary to vulcanize, the rubber would come from the vulcanizer a different color from that now seen. So it is fair to suppose, that if the color remains the mercury remains.

Again, it takes about 662° to boil mercury, and from 400 to 600° to volatilize it, and it is not to be supposed that vermilion would require less heat to volatilize; and again, when undergoing the process of vulcanizing, the rubber is confined in a plaster mould, and placed in a tight copper or iron chamber, from which steam cannot escape, and heated to only 310 to 330°, producing a pressure of from 73 to 80 lbs. to the square inch, which prevents even water from evaporating. Now, the point to which we desire most to call attention, is the fact that if mercury enters into the combination of this material at all, whether in the red oxide or the bi-sulphuret, it cannot escape during the process of manufacture. This point established, we will proceed to examine the component parts of vermilion, as this article is admitted to be used as a coloring matter, and see what proportion of mercury is in it. We here give Kirchoff's method of making vermilion. He recommends triturating 100 parts of mercury in a porcelain dish with 23 parts of flowers of sulphur; chemical action being assisted from time to time by moistening the mixture with solution of caustic potassa: a potassa lye containing 53 parts of solid hydrate in 53 parts of water is next prepared, and in it the sulphurized mercury is warmed and further triturated. The water must be replaced as it evaporates, and the operation continued for two hours. After this, and still with trituration, the red mass is evaporated to a thin paste, removing the heat at the moment when the red color has attained its finest shade, for a few seconds, either too soon or too late, deteriorates the quality of the product. Too little heat fails to bring up the red to its utmost degree of brightness, and a little too much, or even too long continuance of the proper temperature, changes the color to brown, and it can never be restored.

The product, when cool, is first washed with a solution of potassa, and afterwards with water. Ure, in alluding to this process, says, "It appears, by the following table, that the quantity of vermilion which can be obtained depends upon the relative proportions of the substances employed." For instance,

Mercury.	Sulphur.	Potassa.	Vermilion.
300	114	75	yield 330
300	115	75	" 331

Now it would seem from the component parts of vermilion, allowing no waste on the manufacturing of the potassa and sulphur, there would be 151 parts of the 330 mercury. "It is soluble in nitro-muriatic acid; when heated with potassa it yields globules of mercury. In the open air it is decomposed by heat, the sulphur becoming sulphurous acid and the mercury being volatilized. In closed vessels, at a red heat, it sublimates without decomposition, and condenses in a mass composed of a multitude of small needles. It is composed of one eq. of mercury 202, and two of sulphur 32=234."

ITS MEDICINAL PROPERTIES AND USES.

It is seldom used or never given internally.

It is sometimes employed in the way of fumigation, as a rapid sialagogue, in venereal ulcers of the nose and throat, in cases in which it is an object of importance to bring the system under the influence of mercury in the shortest possible time.

We cannot see so vast a difference between the red oxide or the bisulphuret of mercury, as our learned friend would lead the profession and public to believe.

Now it may be said this compound is healthy. It is used in the manufacture of wafers, and we often read of children being killed by eating wafers. Mr. Taylor states that thirty to seventy grains applied externally have proved poisonous to the lower animals. It has been used in connection with musk to cure hydrophobia, etc. Now if this will remain in the vulcanite rubber when once incorporated with it from the process of vulcanizing, then it may not be injurious; but in order to establish this fact, it must be shown conclusively that no fluids of the mouth are capable of acting upon the hard rubber. We often find in mouths secretions capable of acting upon silver plate and eighteen caret gold. It is well known several kinds of acids act upon hard rubber, and all oily substances, chloroform, etc., more or less. Vermilion itself may be decomposed by nitro-hydrochloric acid, and converted into chloride. The hydrate of caustic potassa heated, will decompose it, and produce metallic mercury. Now, what we wish our learned editor to establish by his representation, if he can, is, that this article is perfectly healthy if, through any process of decomposition, it should detach itself in part from the rubber compound and be swallowed by the person having a set of teeth. Also, whether sulphur, under the same circumstances, would be healthy. These points, fairly established, would place beyond all doubt the propriety of using this base, colored with vermilion, in any and every one's mouth who was obliged to wear artificial teeth, so far as regards the purity of the material. We do not wish to be understood by this article to be opposed to the applicability of this substance to dental purposes. In many cases it is exceedingly useful, especially for temporary sets; and in many other instances it is an auxiliary to the profession of considerable value; but we have contended, and still do contend, that we want a different *coloring material.*

By reference to our advertisements it will be seen that Dr. Dieffenbach has returned to this city from his late tour in Europe, where he has been for the purpose of perfecting his amber base. He informs us that by careful experiments he has been enabled to produce an article for vulcanite purposes superior to that used by the American Hard Rubber Company, with a beautiful pink color, which nearly resembles the gum, and discarding entirely any mercurial preparations in its coloring matter. He also states that his improved "Vulcanite Rubber Base" is a superior article, at a price far below any yet in market. We have received for sale some of his different compounds, and they appear to be a decided improvement in the way of vulcanite base. The Dentists throughout the New England States can be supplied by his general agent, Dr. J. L. Simonds of Boston, who keeps a supply of Dr. Dieffenbach's improved material and an assortment of the best and most approved styles of teeth for the vulcanite work.

LIST OF BOOKS RECEIVED.

The Dental Register of the West, Cincinnati.
The Dental Cosmos, Philadelphia.
The Dental Enterprise, Baltimore.
The Dental Review, London.
The Review Odontotechnique, Paris.
The Boston Medical and Surgical Journal, Boston.
The Journal of Rational Medicine, Cincinnati.

The Chicago Medical Ex., Chicago, Ill.
The Cleveland Medical Gazette, Cleveland.
The Louisville Medical Journal, Louisville.
The Nashville Medical and Surgical Journal, Nashville.
The San Francisco Medical Press, San Francisco.
The St. Joseph Medical and Surgical Journal, St. Joseph.

Practical Treatises on Mechanical Dentistry, by Joseph Richardson, D.D.S., M.D., Professor of Mechanical Dentistry, in the Ohio College of Dental Surgery, with one hundred and ten illustrations. Phila.: Lindsay and Blakiston.

This is the title of Prof. J. Richardson's new work, a copy of which we have received, and have before us. We are happy to say that we have experienced more pleasure during our examination of this work, than we have had in performing a similar duty for a very long time.

It is quite evident that Prof. Richardson is thoroughly and minutely acquainted with every topic he attempts to discuss, both in theory and practice. He exhibits a knowledge of the hidden nooks and corners of the dental laboratory, quite refreshing, in view of the superficial treatment the subject has usually received.

The profession has long needed just such a work as this; for though we have many good books upon dentistry, they have all been written by persons who undertook too much; trying to give information upon all branches of the subject, and succeeding of course only in presenting a very meagre outline of each.

In presenting these subjects theoretically alone, as they were forced to do from lack of practical acquaintance with them, they only did half the work, leaving the balance for authors like Professor Richardson, who undertakes no more than he is capable of performing.

This then is the true merit and value of this work; that it selects one great and important branch of dental science, and exhausts it, placing it in such plain and practical form, as that every student sees and understands its merits at a glance. We are pleased with Prof. Richardson's division of his subject into surgical and mechanical dentistry; under these two heads practical men are beginning to treat dentistry as they should be treated, distinctly and separately. The arrangement and division of this book is in the best taste, and is the simplest and most convenient arrangement for the student. He has given many recipes and formulas for working and compounding metals, minerals, etc., which we have never before seen published in a dental work, and which are of great importance to the student. His treatment of the continuous gum work is creditable to himself, yet many things are left unsaid that might have been said.

There are some formulas and modes of manipulating in the manufacture of mineral teeth, given by Prof. Richardson, to which we might take exception; but as it would be of little importance to the dentist, and the author of the book is not a practical toothmaker, we pass them by. We think that this work should be in every dental library; not to fill up a vacant space (and many such vacant spaces exist which might better be filled), not for this, but as a work to be used and studied. The sum of $3 25 could not be spent to better advantage.

Dr. L. D. Radzinsky will commence a course of lectures on Dental Surgery, at 203 Sixth Avenue, on the 5th day of January, 1861. These lectures afford opportunities for medical as well as dental students to post themselves up in that very important branch of education so nearly allied to medicine.

W. B. ROBERTS,

TEETH MANUFACTORY AND DENTAL DEPOT,

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SUCCESSOR TO J. M. CROWELL.

Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins,	20	cents
do do do with holes	15	"
Single gum-teeth for vulcanite or cheoplastic base work with pins	15	"
do do do plate work	15	"
Continuous gum teeth, with Roberts' one pin,	8	"
do do with two pins,	8	"
Plain teeth for vulcanite or cheoplastic base,	8	"
do for plate work	8	"

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor; and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as to go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, do do	1 00
Platina, do do	6 50
Etching, Enamel, per box,	1 00
Pure Gold,	1 10

Carvers or Knives for continuous gum-work, etc.

Metals and Minerals.

Gold plate 18 carats,	$0 90	per dwt.
do for clasps,	90	"
Gold solder, 18 carats,	90	"
do 16 carats,	75	"
Pure Gold,	1 10	"
Pure Silver Plate,	2 00	per oz.
Precipitate of Silver,	2 00	"
Townsend's Cement,	1 50	"
Silver Solder,	9	per dwt.
Bismuth,	1 50	per lb.
Asbestus,	38	"

Tin, lead, zinc, and all other metal at the lowest market prices.

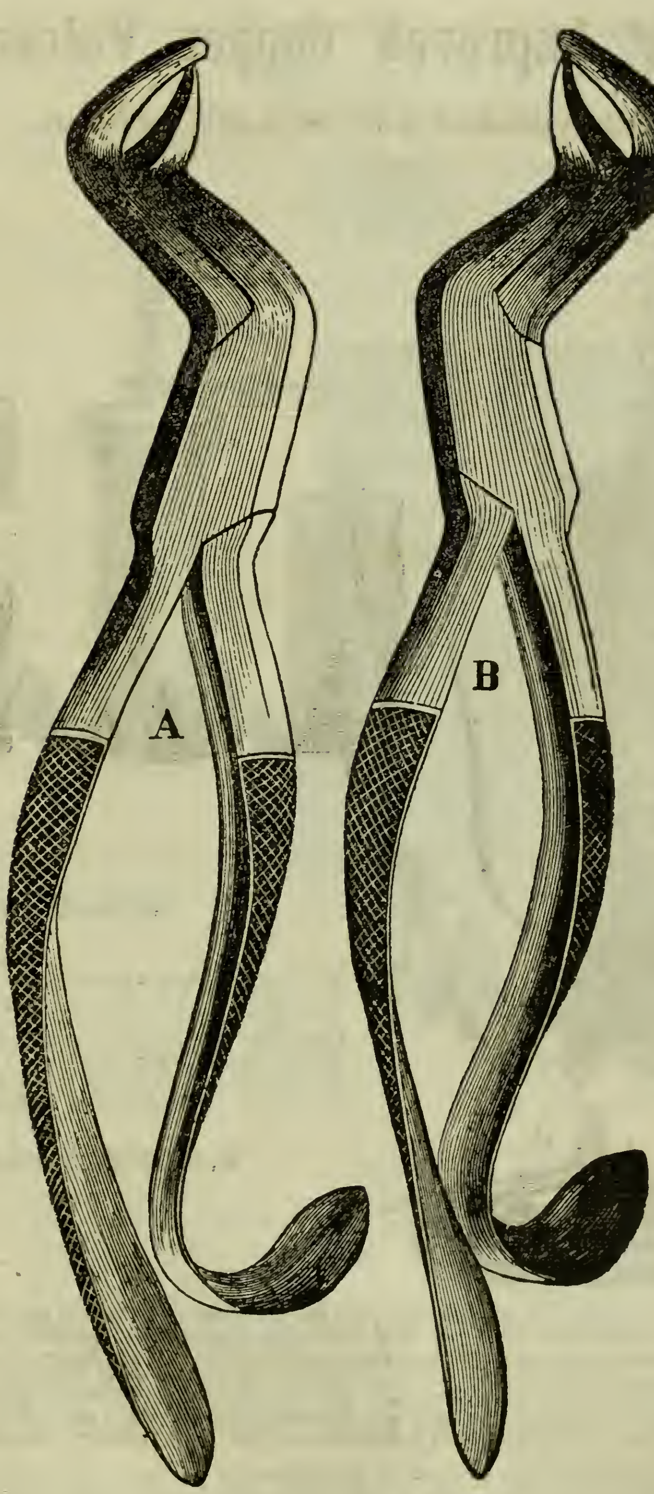
Vulcanizers.

Small size alcohol-burning machine, 2 pieces	$18 00
Large " " " 3 "	20 00
Small size gas-burning machine, 2 "	18
Large " " "	20 00
Adjustable set screw for Index,	1 00
Small size gas-burning self-regulator, 2 pieces,	23 00
Large do do do do	28 00
Amber Base for Vulcanite,	8 00
Rubber Base do	3 00

Furnaces.

No. 1, Large Furnace, with three muffles, $18 00. Muffles each,	$0 44
Boxing and cartage,	1 75
No. 2, Furnace, with three muffles, $16 00. Muffles each,	38
Boxing and cartage,	1 50

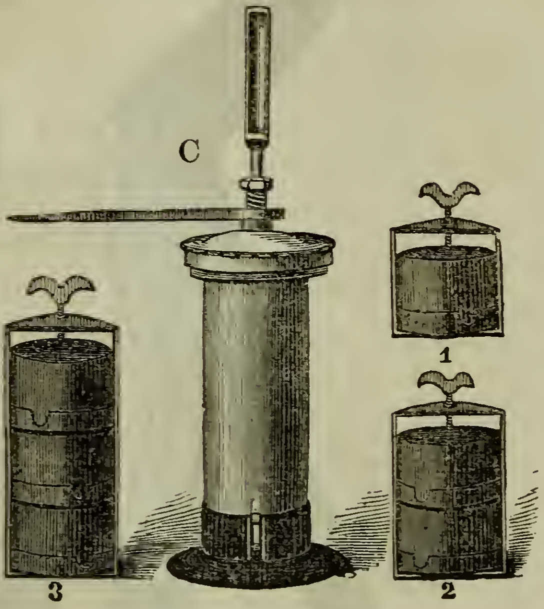
Dental Chairs, Rolling Mills, Roberts' Wisdom Teeth Forceps, and all kinds, of the most approved make and style. Excavators, pluggers, plate punchers, etc., etc.



The above cut represents Roberts' Improved Wisdom Teeth Forceps.
Price, per pair, - - - - - - - - $2 50
Can be had at our Dental Depot, 649 Broadway, New York.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.



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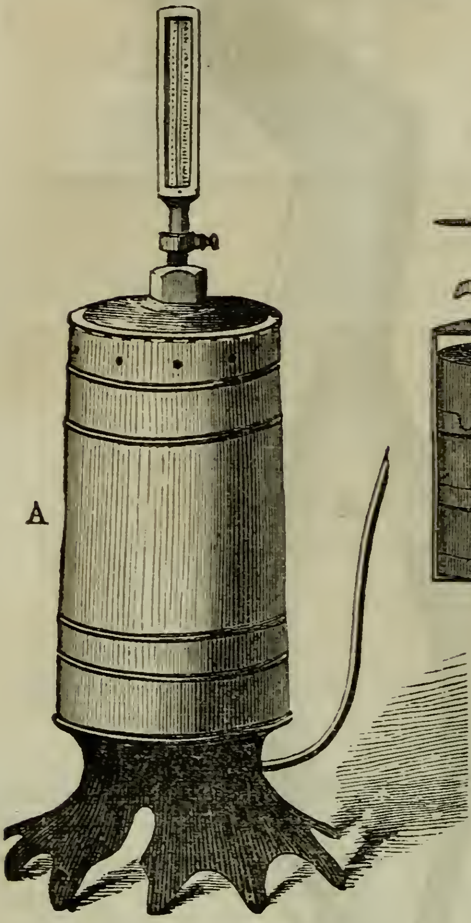

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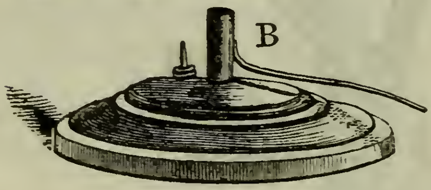


PRICES

No. 3, large size ...	$12.00
" 2, second "	10.00
" 1, small "	8.00
Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra....	1.50
Brass cylinders instead of sheet iron, extra	1.25

W. B. ROBERTS, 649 Broadway.

These machines are the most compact, light. and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal, dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2, second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench, which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

The cover of each machine has a plug of fusible metal screwed into it, which fuses and allows the steam to escape before the pressure reaches one hundred and twenty pounds. This machine, for simplicity, safety and economy, is superior to all others, requiring less than half a pint of alcohol, or if gas is used, one fourth of a burner of ordinary size, to vulcanize.

E. A. L. ROBERTS'

DENTAL DEPOT,

56 Bond Street, New York.

REFINER, MELTER AND WELDER

OF

PLATINA SCRAPS AND ORE.

IMPORTER AND MANUFACTURER OF PLATINA PLATE AND WIRE; ALSO, MANUFACTURER OF THE MOST APPROVED FURNACES, VULCANIZERS, AND LATHES; DEALER IN TEETH OF THE BEST MANUFACTURERS, VIZ.:—

Jones & White, Stockton, Roberts, and Porter.

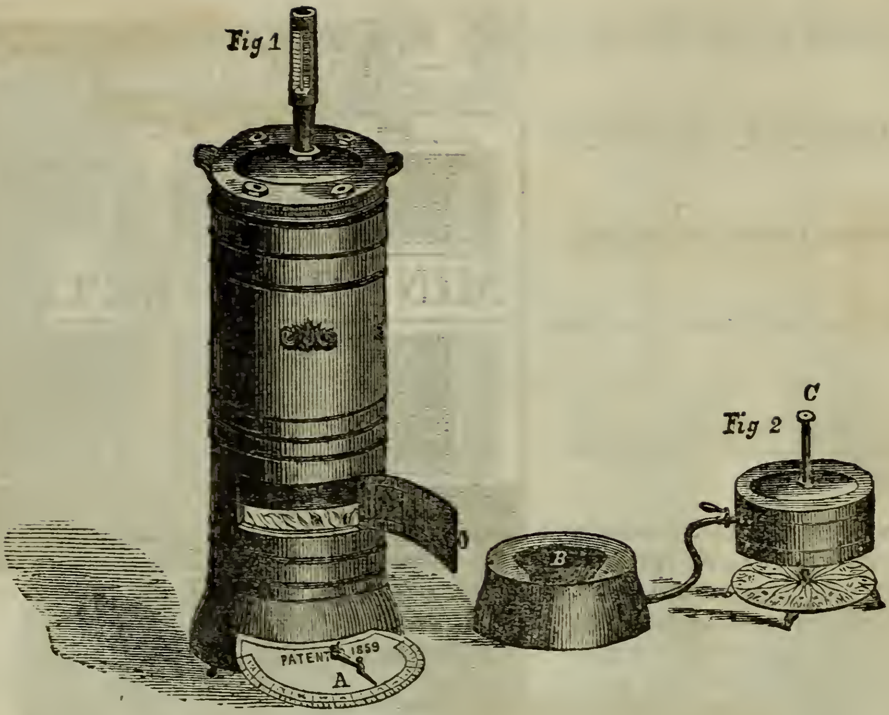
LIST OF PRICES.

Materials for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, " "	1 00
Platina, " "	6 50
Pure gold, " "	1 10

Teeth.

ROBERTS' Gum-teeth for plate-work,	$0 15
" Plain " "	0 8
" Continuous gum, 1 pin,	0 8
" " " 2 pins,	0 8
" Blocks or sections for vulcanite base, or cheoplastic work, with pins,	0 20
" " with holes,	0 15
" Single gum-teeth for vulcanite work, with long pins,	0 15
" do do with holes	0 15
PORTER'S Gum-teeth for plate-work,	0 16
" Plain " "	0 8
" Continuous gum, 2 pins,	0 8
" Roberts' " 1 pin,	0 8
" Gum for vulcanizing long pins,	0 16
" Block " "	0 20



E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top; the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

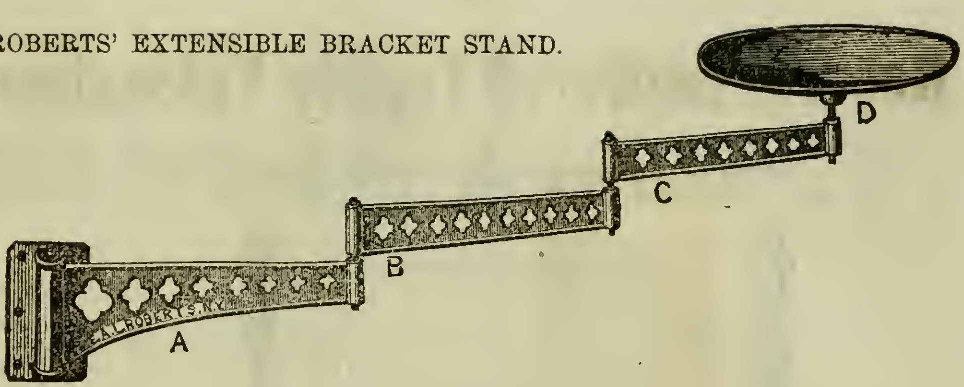
The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

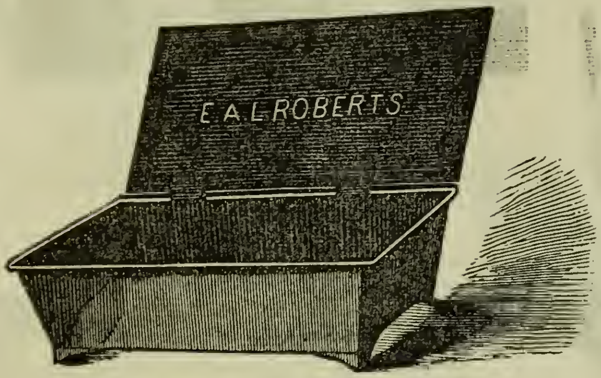
The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

ROBERTS' EXTENSIBLE BRACKET STAND.

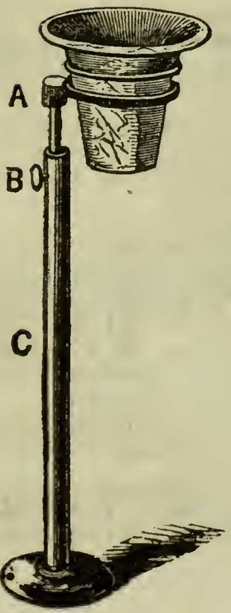

D
C
B
E. A. L. ROBERTS, N.Y.
A

This very convenient stand is made of three segments of ornamented iron, A, B, C, (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equally and firmly adjustible to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

IMPROVED MOULDING AND SAND BOX.



The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

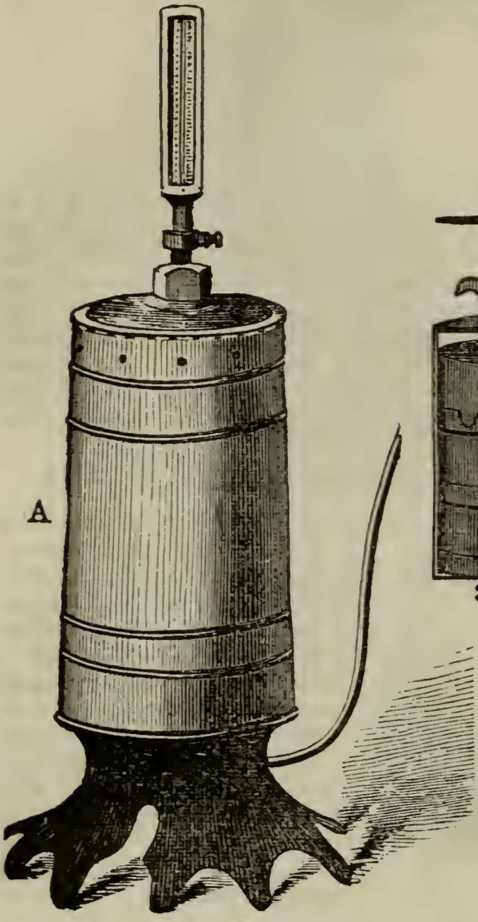
A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

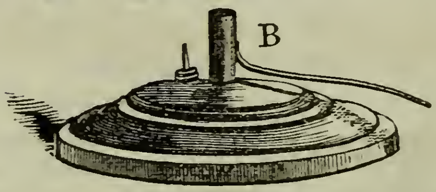
IMPROVED FLASKS, &c.

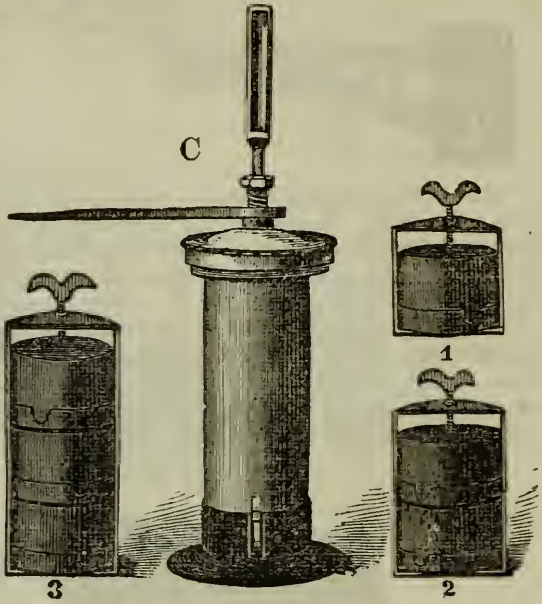
We now offer an assortment of Flasks, viz.: Hawes', Sectional, and others, moulding rings of all sizes and styles, melting ladles with adjustable handles—an improvement of our own—with a full assortment of furnace and melting tongs.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.







PRICES.]

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" 1, small "	8.00
Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.50
Brass cylinders instead of sheet iron extra	1.25

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Hereafter, prices of **Rights, Apparatus,** and **Materials,** will be as follows, viz:—

For an OFFICE-RIGHT, *without tariff*,	$100 00
" " Improved GAS and ALCOHOL HEATER,	$16, $20, 5 00
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" Improved FLASKS, each,	35
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Other TOOLS and MATERIALS at reasonable prices.

Those wishing their work Vulcanized at the Agency, can depend upon our

Promptness, Fidelity, and Reasonable Charges.

We have every facility for doing the

WORK IN THE BEST MANNER.

The character of our work is acknowledged to be Superior, and the results

UNIFORM AND SATISFACTORY.

Those wishing to test the work can set up their

TEETH IN WAX,

On a thin

PLASTER MODEL OF THE MOUTH,

AS THEY WISH THE CASE TO BE FINISHED, AND SEND TO THE AGENCY; IT WILL BE

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Flasks For Making Dies.

The Profession is hereby respectfully informed that these Flasks will be furnished hereafter by no one but myself. All orders sent directly to my address, will be promptly and perfectly filled.

Prices of Flasks complete (three sizes), with full instructions, $10; set of Impression Cups, $3.

Sent by express, and payable on delivery.

F. Y. CLARK, Savannah, Ga.

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A Monthly Record of Dental Science.

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JOHN T. TOLAND, Publisher and Proprietor.

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PERSIAN BALM.

I beg to call the attention of the Profession to the above article as a Dentifrice, as well as general

TOILET SOAP
FOR DENTISTS' USE.

It is made of the finest materials, put up in very large bottles, sells to Dentists at $2 per dozen, making it the most perfect Toilet Soap as well as the cheapest in use. As to its excellent qualities as a Dentifrice there can be no doubt. The experience of some of the best in our Profession has been greatly in its favor.

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The new Amber Base, the Pink Vulcanite, Best Prepared Para India Rubber, for the Vulcanite Work, with Improved Colors, containing no Mercurial preparations.

Improved Amber Compound, - - - - -	$8 00
Pink Vulcanite, - - - - - - - - -	5 00
New and Improved Rubber, - - - - - -	2 50

W. B. ROBERTS,
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TO THE

DENTAL PROFESSION.

DOCTOR G. DIEFFENBACH'S

Improved Amber Composition,

WITH

GUM COLOR PINK VULCANITE,

AND BEST PREPARED

PARA INDIA RUBBER GUM.

I am happy to inform the profession that, after long and continued experiments, I have at last obtained an improved quality of Amber Composition, which for strength, toughness, and elasticity, can compare not only favorably with the other compounds sold for the same purposes, but it leaves nothing to be wished for. In my former circulars, to which I beg leave to refer, I have given full explanations of the respective qualities of the Amber Composition *vs.* Vulcanite. Still I will here acknowledge that formerly my Compound was not all that could be desired, owing to some difficulties of manipulation, and impurities of the chemicals used; all of which I have removed and obviated, whilst experimenting here and lately in Europe. I will here state, that as one of the results of my experiments, I have obtained a new and hitherto unknown pigment, by which I can manufacture a quality of Vulcanite far better than the best qualities now in use. In this improved Vulcanite I have applied some of my processes for making the Amber Compound, and the result is a Vulcanite equal in every respect with the best qualities now sold; and requiring but a few hours' exposure in alcohol to sun's rays to develop the most beautiful pink gum color, and not containing any mercurial preparation. For these new and improved compounds of Amber base and Vulcanite, I only ask of the profession a fair trial and acknowledgment of their merits, as a reward for the great amount of time and money expended in perfecting them, my late voyage to Europe having been made solely for these objects.

I will here state that any parties making or selling Rubber Compounds,

the color of which depends upon solar light to be developed, are direct infringements on my patent, No. 24545, as the following extract will show.

"What I claim as my invention, and desire to secure by letters patent, is developing the color of a cured or hardened composition by the agency of solar light, when the coloring matter is incorporated into the said composition while in its plastic or uncured state substantially as described.
"Dated, New York, April 8, 1859."

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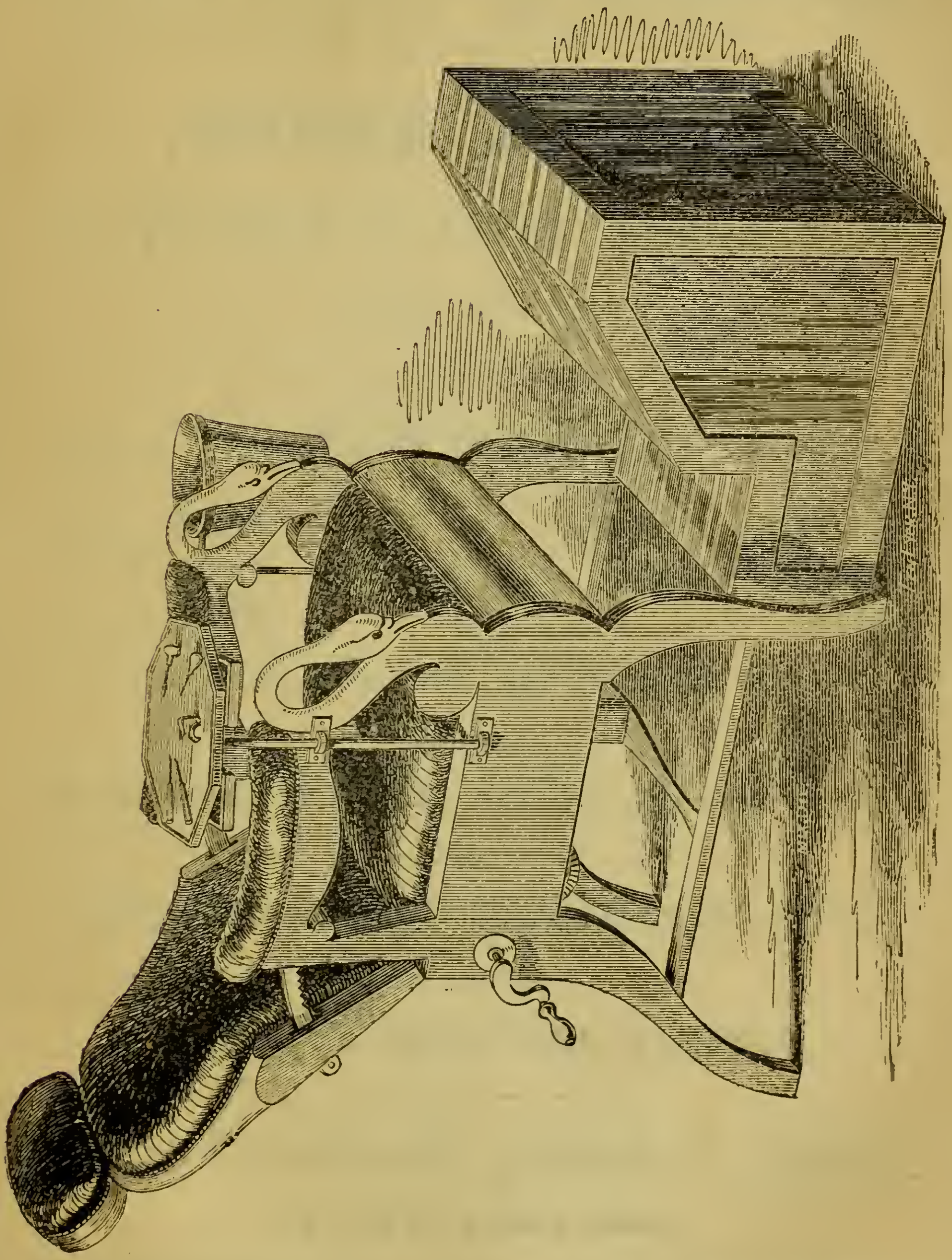

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EDITED BY

W. B. ROBERTS AND FRANK H. NORTON.

APRIL, 1861.

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THE

NEW YORK DENTAL JOURNAL.

APRIL, 1861.

TO OUR READERS.

We wish to draw the attention of our readers to the next subject for our prize articles, "*Lining and Soldering Teeth.*" Upon this subject we have already received several able articles, and shall be happy to obtain others, and thus be enabled to make a fair comparison of the various views held by the profession. The prize for the best article on this subject is, *a complete set of the instruments used in this manipulation, viz., shears, plate-punch, tweezers, blow-pipe, etc.* For the second best essay, we offer a copy of *Harris's Dictionary of Dental Science.* The importance of these essays to the profession cannot be over-estimated. Many dentists, whose time is too much occupied by their professional duties, are able to pick up from them ideas of the greatest use and advantage to them, which, without some such medium of communication, would be lost entirely, or known only to a few. Therefore we say to all, "*Write!*" Any one who has made, or thinks he has made, a new discovery or invention, has an opportunity of submitting it to public criticism, and ascertaining at once its real value, besides possibly doing much good to those less fortunate or less capable than himself. In most trades and professions the great difficulty is to repress the prevalent inclination of members to see themselves in print. Take the medical profession, for instance: its periodical organs are a legion; and week after week, month after month, and year after year, they are all crowded with contributions from everybody, upon every topic connected or disconnected with the subject of medicine. Now, in all this mass of matter which is thus laid before the profession periodically, although there is necessarily a vast amount of chaff, there is, nevertheless, considerable pure wheat; and thus the *amount* of material which would seem to be an unfortunate point, becomes really a certain assurance of real good. The dental profession cannot be called very expansive in regard to writing; they are rather secretive; and we desire to urge upon them the propriety and even necessity of their coming out of their retreats, and doing something for the good of their brethren. Let every man who thinks he can say any thing new, powerful, or good, say it in as good English as he can, and we will offer him every inducement we can to place it in print and before our readers. Therefore, as the best advice we can give to the dental profession, we say: "Gentlemen, *read* and WRITE! !"

NEW YORK CITY DENTAL ASSOCIATION.

At a meeting of this Society on Wednesday evening, November 28, Dr. *McIlroy* in the chair, the subjects for discussion were:

1. Taking of impressions.
2. Making plaster models.
3. Making metal dies and swaging plates.

Dr. *Franklin* said that taking impressions was a very important matter. Upon the impression depended the success of all after manipulation; it was the substratum upon which the structure was reared. He took the position, that no wax, gutta percha, or any other impression but *plaster* could be relied upon. No other impression was reliable. His mode was to take an ordinary cup and cut the rim down to a mere elevation—the less the better—no more than one sixteenth of an inch; then to take the ordinary wax impression, depressing the entire surface one sixteenth of an inch, following all the inequalities of the wax impression equally. With the wax prepared in that way, an impression of the deepest under-cuts could be taken. After getting this kind of an impression, when he came to fill the model, he oiled or varnished the surface. He filled with two or three parts of sand, which gave a beautiful surface to the model and the least possible expansion. He never mixed salt with the plaster if he could get it to set without, because the tendency of the salt was to crystallize. One of the troubles with a wax impression was, that the ligamental attachments were generally displaced. His method was to cut out freely, to allow the plaster to pass round them; for partial cases he took an impression the same as for whole sets. When the model was out and ready for moulding, he would varnish it with liquid silex. The moulding of the model was an operation of some nicety. It was difficult to give a description of preparing the sand properly, being one of those things learned by observation and experience. The only test he could give of the sand being properly prepared, was by pressing it in the hand: if it left the hand clean, taking a good impression of the lines, it was in order; if it stuck to the hand, it was too wet. When zinc was used for dies, it was important that it should not be overheated; it should be poured as cold as possible, when the crystals were shorter and more compact.

Dr. *Stratton* remarked that some of the ideas that had been suggested were entirely new to him, and he had listened to them with great attention and a good deal of satisfaction, but he should say that a great deal of this very fine management in taking impressions appeared to him to be superfluous. He had been many years in the practice of dentistry, and in a majority of cases, until within a few years, he had taken impressions in wax, and had but very little trouble with his plates. The plan of taking them in plaster was, he admitted, the best; and the plan of taking them in plaster, after having taken a wax impression and cutting it out, he thought highly commendable. But to say that a true impression could not be taken with wax, was going too far. A wax impression required a good deal of care; the wax should be neither too hot nor too cold; that it should be nicely balanced in the mouth, and taken out carefully so as not to disturb the edges. Since plaster of Paris had been introduced he had generally used it himself, and found it very satisfactory. Neither in plaster, any more than in wax, could impressions be taken without a good deal of care and skill. He would like to learn about taking impressions where the teeth stood crooked, inclining toward each other. He had been very much bored taking impressions where the large molar tooth inclined forward, and the eye-tooth inclined backward.

Dr. *Allen* said his method of taking impressions varied according to circumstances. He knew of no plan that would be adapted to every case. For many years he had used wax in taking impressions, but for the last fifteen years he had used plaster a great deal more than any thing else. For partial sets he used the prepared wax sold at dental depots; with that he could take an accurate impression, provided the teeth did not approximate at the points. If the teeth overhung, he used gutta percha. But whether wax or gutta percha were used, it should be cold before taken from the mouth, so as to retain its form. There were many cases where the teeth were much smaller at the neck than at the crown, when but a very imperfect impression could be got with wax. He selected a description of gutta percha which softened at as low a heat as common beeswax. It was that kind which had run out on the ground and lain until it was bleached white. To feel it, it was brittle, but when softened in warm water it became tenacious. A person might look over many thousand pounds of it before finding a piece of this peculiar quality—but when found, it was the best thing he knew of for taking impressions of overhanging teeth, because it yielded enough, in removing it from the mouth, to pass the close proximity of the teeth, and to spring back to its place. There was elasticity enough about it to spring back and retain its positive form.

Plaster he preferred for general use, and he considered the alabaster better than the common plaster: it was finer and gave a smoother impression than the common plaster; it set as readily, or nearly so; it was finer, smoother, harder, and made a more beautiful impression than plaster. The most of the plaster used was rather coarse. He considered the method referred to, of taking an impression with wax and then with plaster, an excellent idea, but a novice would have difficulty in doing it. Unless it was carried out to the letter, by compressing and enlarging the whole of the wax impression thick enough to admit of as much plaster as necessary, it would be so thin in places as to crumble from the wax. It required great care and manipulation, after the plaster was turned in, to take the second impression, to be able to get a perfect impression. The same point might be reached by taking a gutta percha impression first, and putting wax into it. The plan laid down he regarded as the most perfect where careful manipulation was resorted to. If only a few scattering teeth were left in the upper jaw, he would take the first impression with wax, and the second with plaster; wherever it broke away from the teeth it could be put together again when removed from the mouth, thus making a perfect impression, provided room was allowed for a sufficient thickness of plaster. With reference to the consistency of the plaster, the condition of the mouth was to be regarded. Sometimes they found the roof of the mouth remarkably soft, so as to be almost a bladder; if the plaster was of too thick a consistency, it displaced those soft portions; and when filled, the plate, riding upon those soft portions, was buoyed up and thrown off. When the mouth was very soft, he used the plaster thin, so as not to displace the soft parts at all; or if wax were used, it should be very soft, in order to get a perfect impression. Not long since he had taken three impressions from the same mouth: one, taken with soft plaster, showed the rugæ, and every lineament as truly as could be; another taken from the same mouth, with very stiff plaster, did not distinctly define the air-chamber, which was plainly shown by the first one. As a general rule, the plaster should be as thin as could be used. Perhaps the nicest point of any was the taking of lower impressions for full sets. For these he invariably used plaster or alabaster. When the cup was properly prepared, he turned it over, and keeping the folds of the cheek and of the lip out of the way, he was able to get an impression of the lower jaw in plaster; and this had many advantages over wax, for when made, it kept its place, it was not injured in taking it out of the mouth. After the plaster impression was taken, if a wax impression were taken from the same lower gum, they would be found to differ wonderfully: the one would appear shallow, while the other was very deep; and this fact misled dentists more than almost any other step they took. He thought there were more failures by reason of taking lower wax impressions thus misleading the operator, than any other thing. It was well to study the case and observe all the points of the mouth before taking the impression. In making impressions for partial sets below, he would be governed by the same principles as for partial sets above—using wax or gutta percha of the quality he mentioned.

Dr. *Hurd* had always taken impressions by first using wax and then plaster, but he did not go into all the nicety spoken of. He would use a larger amount of plaster than had been mentioned, for this reason, that he had to choose between two evils—either breaking the plaster, or getting along with expansion. He thought the expansion was obviated by the immediate filling of the impression. Where he wanted to adjust an atmospheric plate for a partial denture, he took the impression first in wax, then cut out the wax, leaving the teeth well marked in the wax; reduced the centre sufficiently to leave in a small piece of wood in the centre of the impression, and through the centre of the mould made a hole; he passed a string through the centre of this and over the piece of wood, and then set the impression into the mouth, the manner of doing which was important. When the plaster was sufficiently set, he had the impression by the centre; and with the aid of the cup and the centre hole he could generally remove any impression. He differed with Dr. Franklin about some things. To say that an impression could not be taken with any thing else but plaster he considered a mistake. They judged of perfect impressions by the fit produced; and he presumed it would be nonsense to say that all the fits made previous to impressions by plaster were no fits at all. He had seen some of the best fits he had known in his life where the impression was taken in wax, at the same time that he agreed plaster was the most reliable. Where the teeth were crooked, he never knew any thing so good as gutta percha. It might be taken out of water hot enough to soften it and put directly in the mouth, and held there until perfectly hard, and be removed without discomfort.

Dr. *Clay* acknowledged himself an "old fogy." He had tried gutta percha, plaster, and wax, and he "stuck to wax" in preference to the others. He rarely had to take a second impression. He had a case a short time ago, where a tooth stood in nearly forty-five degrees, that he thought would have puzzled any one to take an impression with plaster. He managed, in such a case, by taking a double cast with wax.

Dr. *Parks* made some remarks on taking impressions, and the Society adjourned.

NEW YORK CITY DENTAL ASSOCIATION.

The regular meeting was held Wednesday evening, December 12, 1860. The Vice President in the chair.

On the question of non-attendance of officers, Dr. *Roberts* moved, and it was

Resolved, That the following be one of the by-laws of this Society: If any officer of this Society shall be absent from three successive regular meetings, said office shall, by this rule, be declared vacant, unless a reasonable excuse be given; and the Society may proceed to fill said vacancy.

Resolved, That the Secretary *pro tem.* be instructed to forward a copy of this resolution to each officer of this Society.

The subject of discussion from last meeting continued, with the addition of striking-up plates, taking an articulation of the mouth, and the arrangement of teeth.

Dr. *Roberts*, not being present at the discussion of former meeting, wished to say a few words on the subject of taking impressions. They were called upon to take impressions of the upper jaw, where they wished to insert a full set; also of the lower jaw. They were also called upon to take impressions for partial sets. As a matter of course, all those different cases required different manipulation. In taking full cases, his method had been, for several years, taking them in plaster of Paris; and he had varied the manipulation—upon many occasions using a common cup, with nothing in it but plaster, also taking first a wax impression, cutting out, and using plaster. Latterly he had abandoned wax entirely for taking full sets, but for partial cases, in many instances he used it. In this, as in all other things, dentists had to exercise judgment, according to the circumstances, and use that which would produce the best results. Sometimes, for difficult cases, where there was an under-cut, he used gutta percha; where a tooth leaned much, it was almost impossible to get an accurate impression except with gutta percha, which would spring in drawing it from the tooth. In some cases he had put a little tinfoil around a tooth of that character, when taking an impression with plaster, to prevent its sticking when being drawn from the tooth. He generally selected a cup that would fit the mouth as nearly as possible, and had had as good results by using simply a cup with plaster of Paris as by first using wax and cutting it out, and using plaster for a second impression.

A dentist wanted a great variety of cups, in shape, size, and depth. Where the jaw is very deep, the cup should correspond. There had been considerable trouble in getting a proper shaped cup for the under jaw; as a general thing those used were too straight. He had three cups which he bought ten years ago, for under-impressions, and he had never been able to get the same shape since. They were of a shape that would fit most cases. He generally filled the cup with plaster, and when he got it ready to put in the mouth he turned it over quickly, then introduced one corner of the cup in the mouth, and with one finger in the opposite corner of the patient's mouth, gently pulled back the lips, and with a slight turn of the cup it would be easily introduced. He then carefully worked it down upon the jaw, requesting the patient to touch the roof of the mouth with the end of his tongue. It was very difficult, sometimes, to keep the tongue from getting under the edges of the impression-cup. This was easily obviated by raising the tongue as described, and holding it there while adjusting the cup to its place; then, with the thumbs on the top of the cup, and the first finger of each hand under the chin of the patient, hold it until the plaster hardens; and he seldom had a failure in getting a good impression.

After getting the impression, the next step was to make a plaster model, which was, perhaps, a simple process that every dentist understood. Then came the making of a metallic die. His mode had always been the making of a mould in sand from the plaster model; and the sand should be properly tempered. He most generally used pure zinc for the male die, and for the female die, lead. He had adopted the plan of making a second die, of fusible metal, in some cases, where he wished to be very exact. He would not go into all the details of making metallic dies; but in making plates, after getting the die, perhaps there was not as much attention paid to it in general as there should be. Metallic plates only came properly within the discussion. Two of these, he considered, required a little different manipulation. Gold could be driven down with the dies, with less risk of tearing or damage than platina. All plates should be first bent down, and driven with the hammer and a driver as near to the fit of the die as possible. In swaging a platina plate, there must be more care taken in keeping the plate clean than would be necessary in case of a gold plate. The least particle of zinc upon a platina plate, in making a continuous body upon it, would be injurious. The general rule should be, to keep all base metals from a plate when swaging. The die should always stand as level as possible, while swaging, and as a general rule something should be placed upon the metal die, between it and whatever was used in swaging. With a small-faced hammer there was danger of getting the die entirely out of place; therefore the surface should be as level as possible, with a safe-punch between the hammer and the die, so as to drive the whole surface of the die at once equally. Without such care an accidental blow might be given that would annoy the dentist in his future work upon a set of teeth.

In continuous gum, with a platina plate, there was often found to be a little difference in the fit of the plate after it went through the first and second bake. To remedy this, when having a metallic die known to be correct, it was perfectly easy, after the first or second bake, to place the plate upon the die again, and with a blow of the hammer upon the die, with the teeth pressed into a napkin or towel resting upon the knee, drive it to its place again. It was very essential, in the first place, to get the plate to fit the jaw properly; and then more essential still to keep the fit from the beginning until the set of teeth was fully constructed.

Dr. *Allen*, continuing his observations from last meeting, said, the impression being taken, and the model prepared, the next thing was to form the dies. His method was, first to form a zinc die, strike the plate with that die, then take from the model a fusible die. That fusible die should be the one last used for striking the plate. In striking the plate, a punch, made of wood or bone, or what is called a driver, should be used, with a mallet. Hard rubber or gutta percha was good for this purpose. In striking the plate great care should be taken not to hammer it too much; for it would not only spread the counter die, and make it larger than necessary, but also thin the plate. Two or three true and heavy blows were sufficient. After a perfect fit is obtained from the zinc die, again strike with a fusible die, in order to make the plate a little larger than the zinc die makes it; because the contraction of the zinc is greater than in the fusible die, and the fusible die leaves it nearer the shape of the mouth than the zinc die. The zinc die contracts too much to be a reliable die in all cases.

Dr. *Hurd* said, in reference to getting up plates it depended a good deal upon the kind of plates they had to get up. The easiest plate to strike up was pure silver. The most difficult to manage were some of the gold plates purchased at the depots. A plan he had for overcoming the stubbornness of some of these was to strike them between two zinc moulds.

Dr. *Stratton* said that after he had got his impression, he filled the mould with plaster of Paris. As soon as it was sufficiently hard, he oiled it thoroughly. He then rubbed the oil off, and put on a little gum sanderac varnish; let it stand until hard; the sand being prepared, made a mould, and cast the male die of zinc; for the counter part he used lead, with a little block tin; then struck up the plate in the manner described by Dr. Allen.

Dr. *Burras* reviewed the opinions that had been given by the different members, agreeing with the views of some, and dissenting from others.

The Society then adjourned.

NEW YORK CITY DENTAL ASSOCIATION.

At the regular monthly meeting, held Wednesday evening, January 9th, 1861, Dr. *McIlroy* in the chair,

On motion of Dr. *Hurd*, it was

Resolved, That the Chairman be requested to designate a member of the Society at each meeting to prepare an essay to be read at the next meeting, upon any subject connected with the dental profession.

The subject of discussion for the last meeting was continued, with the addition of taking an articulation of the mouth, arranging the teeth, and completing an artificial denture.

Dr. *Franklin* said they had left the subject, on the last meeting, at the raising of the plate. The next movement was the fitting in the mouth, and determining whether the plate was a perfect adaptation. Many were in the habit of concluding that the adaptation was perfect by simply taking hold of the edge of the plate. The holding of the plate under such a test was not to be regarded as evidence of its adaptation at all. Plates holding on in this way were frequently liable to displacement when used in the mouth. The operator should press round the edge of the rim, and apply force in the direction it would be applied in the act of mastication. After being satisfied that the adaptation was all that could be wished, the next proceeding was to take the articulation of the mouth. Next to taking the impression, he regarded this the most important matter. The more common method was placing a rim of wax on the plate, trimming it off, and allowing the patient to bite into it. There could be no reliance upon an articulation taken in that manner. There was no way of determining whether there was a lateral swing one way or the other. He had been in the habit of cutting the rim, so that the wax would show as he wanted the teeth to show; then to get the centre of the mouth as near as possible. When the under teeth strike the wax uniformly, he depressed the points of the under teeth in the wax, then took the plate out of the mouth, added a little fresh wax and replaced it; thus getting a perfect impression of all the under teeth, gums, etc. In arranging the teeth, he knew nothing so good as Dr. Allen's plan of placing them a little inside of the alveolar ridge. As to the expression of a set of teeth in a patient's mouth, it varied as much as the features of individuals; there should be a harmony between both. To put a set of teeth suited for a thick-set person in the mouth of a sensitive female, in whose face every line was sharp and marked, would mar the effect. As a general rule, persons of highly nervous organization required slim, narrow teeth. The patient's face would determine the character of the teeth. In soldering on the teeth, he advised the soldering of each separately, with an independent backing, and not united, because the contraction of the solder was apt to disarrange the teeth.

Dr. *Roberts* spoke in reference to fitting the plate to the mouth. He considered that for the success of a case the operator should not stir a step from this point until satisfied that the plate was properly fitted. A plate might be put into a person's mouth, and by taking hold in front, require five or ten pounds to draw it from the jaw; but a little pressure upon the side, or front, or the alveolar process, would loosen it immediately. A plate should be so fitted, when it came from the metallic die, that on being put into the mouth it would suck up, and pressure upon any part would not cause it to drop off. Then there would be fewer complaints by patients of their plates failing when they went to eat. When satisfied he had a perfect fit, he warmed his plate a little and stuck wax to it; he then built the wax on the alveolar process, and got it as near the length he would want the teeth as possible; then try it in the patient's mouth. Leave the wax projecting below the lip about one sixteenth of an inch, so that the two central incisors will show a little more than any other teeth in the set; then permit the patient to open his mouth and shut it, so that the ends of the teeth will just touch upon this wax—not allow him to bite into the wax; in that way, have him open and shut his mouth several times, talking with him and inducing him to talk if possible; then permit him to bite into the wax by opening his mouth as wide as he can and bringing it quickly together, setting the ends of the teeth into the wax about one sixteenth of an inch, and not to exceed the distance the upper ones are to overlap the under; take the centre line, and then remove it and make the plaster articulation in the usual way.

In getting the distance he wished to set the jaws apart, did that by letting the patient bite down so that the lips came in contact with each other. Could get the expression of almost any face after bringing the projection out with wax, and letting the patient press into the wax until the lips just touched each other. This he considered a nice point, which dentists ought to study more than they do.

If he wished to take an articulation of an upper and lower plate, he first arranged his wax upon the upper, taking the length and projection he wished, as before described, and hardening the wax by placing it in cold water, then placing it in the mouth, and with a rim of soft wax upon the under plate, cut a trifle longer than he wished the under teeth, he let the jaws be pressed together, so as to give the proper expression and length; then with three pins or pivots of wood, pinned the two pieces together by running the pins in different directions through the wax and then remove all from the mouth at once.

Dr. *Burras* believed it was one of the peculiarities of the dental profession that dentists should be constantly inventing. Taking the articulation he had found one of the most difficult things in the practice of the profession. He had been in the habit (and he found it the most certain way of getting a good articulation) of preparing the wax, getting the patient to close his mouth as near as possible in the natural position, and then perform the act of swallowing. By this means, as any one could find by trying, the teeth were almost certain to come into a natural position. If you told a patient to shut his mouth naturally, he was sure to put it one side or the other, or push his jaw out or in. Dr. Roberts's plan of pinning the wax together was good in its way; but he considered the plan he adopted better, of taking pieces of wire, bent in the shape of a hollow square, and putting one directly in the centre and two on each side.

Dr. *Roberts* said he made it a rule never to tell the patient to open or shut his mouth naturally; never to tell him he was going to do this or that, but simply desired him to open or shut the mouth, as any anxiety shown on the part of the dentist of the great importance of the operation is always apt to disconcert the patient so it would be difficult to get a correct bite.

Dr. *Hurd* had no particular way of doing these things. There were a great many matters which entered into every day practice; and he did not believe perfect articulations could be obtained by any fixed rule. The error made by patients in shutting the mouth was generally the habit of throwing the under jaw out. When he saw that this was done, he made a mark back of where the patient struck, and giving him a glass, directed him to strike that line with his teeth.

Dr. *Allen*, as at the last meeting he had dwelt somewhat on the points dwelt upon to-night, preferred confining his remarks to the arrangement of teeth.

Getting articulation was acknowledged to be one of the most important things connected with artificial dentures; and it was one in which more error happened than in any other. He had studied the subject closely for thirty years, and was yet liable to run astray. He produced a set of teeth which he had to remake for a lady three different times. They were perfectly-fitting plates and articulations each time; but the moment the patient attempted to converse, the under jaw would swing forward. As at present made, when the mouth was in repose, no one would suppose this was a good articulation; but when the patient spoke, the jaw swinging forward, made it perfect. This was an instance that cases would continually arise where they had to deviate from any definite rules. In arranging teeth, the great error was to make them too even, too monotonous—so that a set of artificial teeth could be at once distinguished from the natural. His effort was to throw the teeth round as crookedly as the nature of the case admitted—so that an observer would not see the whole surface of lateral incisors, thus breaking the monotony. In arranging the canine teeth, he threw the posterior edge of the canine teeth out and the front edge in, with the object of breaking the monotony and preventing the eye from catching the whole surface of the bicuspids. Dr. Allen produced a few sets to show the irregularity he spoke of. In the hand they might look too crooked, but when in the mouth they had a natural appearance. Nature threw the teeth round carelessly in most cases. Art should be so great as to conceal the art. True, there were some cases where a regard for the harmony of the face requires the teeth to be set tolerably true. With a square face it was more proper to set them true, and exhibit a larger surface. It depended upon the configuration of the face, which should be studied by the dentist as an artist studies a picture. Perhaps nothing more changed the expression of the features than changing the position of the teeth.

In arranging teeth, he set them so as to stand as perpendicularly as possible over the alveolar ridge, to give strength.

Dr. Allen concluded his remarks by describing his method (which is a prominent feature of his practice) of restoring the expression of the face by raising the muscles, and exhibited sets of teeth with what appeared very large and uncomfortable protuberances on the sides, but which were worn with perfect ease and comfort.

Adjourned.

NEW YORK CITY DENTAL ASSOCIATION.

At the regular monthly meeting, February 13, 1861, Dr. *McIlroy* in the chair,

Dr. *Allen* read a paper upon

PROFESSIONAL JEALOUSY.

THE BEST MEANS OF PRESERVING TEETH

being the subject for the evening's discussion,

Dr. *Allen* said, in discussing it he would ask permission to go back to the formation of the osseous structure, how it is formed, and how we may be instrumental in producing a good formation.

Although artificial teeth when properly constructed are of great utility, yet the natural teeth, when in a sound and healthy condition, are far preferable.

In order to obtain a sound and well-developed set of teeth, three prerequisites are necessary for their production and retention in the mouth.

1st. A good constitution. If this be frail, more careful fostering will be required.

2d. Such food as contains the proper elements of *bone*, as well as muscle and fat.

3d. Cleanliness, so as to prevent any chemical or diseased action upon the teeth by foul secretions or vitiated saliva.

The constituents which enter into and are embodied in the osseous structure of the teeth are as follows:

Phosphate of lime with traces of fluoride of calcium	66.72
Carbonate of lime	3.36
Soluble salts	0.83
Cartilage	27.61
Fat	0.40
Phosphate of lime	1.08
The enamel, or vitreous substance which covers the external surface of the crown of a human tooth, is composed of phosphate of lime and traces of calcium	89.82
Carbonate of lime	4.37
Phosphate of magnesia	1.34
Soluble salts	0.88
Organic substances	3.39
Fat	0.20

These constituents form the basis of the bones and teeth of a person. In order, therefore, to produce a good osseous structure of the human frame, such articles of food should be used as contain a due proportion of these constituents, for such are the operations of nature in the animal economy, that when food is taken into the system it is duly apportioned and converted into muscle, bone, fat, etc. For this purpose the necessary materials of which our systems are formed exist in the proper nourishment designed for man. But by the present mode of preparing many articles of food, (some of which we will notice,) a large portion of the essential elements for osseous formations are taken out and discarded. For example, the wheat, rye, etc., of which bread is formed, are stripped of the hull and coarser portions of the grain which constitute the requisite materials for bone, as deduced from the following well authenticated chemical analysis, by which it is found that in 500 lbs. of whole grain there is

Muscle material	78 lbs.
Of the fat principle	12 "
Of the inorganic elements for bone, etc.,	85 "
500 lbs. of fine flour contain	
Muscle material	65 lbs.
Fat principle	10 "
Bone material	30 "
500 lbs. of bran contain	
Muscle material	none.
Fat principle	30 lbs.
Bone material	125 "

The foregoing facts should teach the importance of using such food as contains the requisite elements for developing and sustaining a perfect organism in all its parts.

By close and careful scientific researches we have sufficient light upon this subject to serve as a guide which we should follow, for nature is so independent in the administration of her laws that those who disregard or depart from them must abide the result. Food for children ought to be plain and substantial: such as bread, milk, eggs, potatoes, rice, beans, etc. A child needs no meat under four years of age, and very little under twelve.

These constitute the principal articles of food necessary for a good development of the human system.

Adults require the same constituents to sustain the organization of the body that the young do to produce it, otherwise deterioration and decay ensue. More meat may be used as persons grow older.

Bread, the staff of life, should be made with flour with a goodly portion of the hull of the grain left in it, as the proper element for the elaboration of bone; for we need not expect well developed teeth unless the necessary constituents are furnished with which to form them.

Condiments possess none of the necessary elements for producing or sustaining a healthy organism.

Candies which contain poisonous substances, (as many of them do,) are detrimental. Many of the confectioners in coloring their candies, etc., employ the following materials. For their greens, they use Brunswick green, carbonate of copper, or arsenite of copper; for their yellows, chromate of lead, or gamboge; for their reds, red lead, vermillion, or cinnabar; and for whites, white lead—all of which are deadly poisons. Although some confectioners use coloring ingredients comparatively harmless, such as saffron, French berries, Persian berries, fustic wood, etc., for yellows. For red, cochineal, including carmine, Brazil wood, and madder. For blues, litmus and indigo. For greens, mixtures of any of the above vegetable yellows with indigo. If the eye *must* be gratified as well as the taste in these matters, the latter colorings are far preferable to the former; but the purchaser of the candies can seldom tell the one from the other, therefore it is better to use them sparingly.

There are many articles of luxury used that are deleterious to the general health that do not act directly upon the teeth, but indirectly prove destructive, by producing vitiated secretions which affect them. Pure saccharine substances, when used moderately, are not considered injurious to the teeth, but when used in *excess* they become detrimental.

Dr. *Clarke*, at the risk of wearying the older members, who knew his weakness on this subject, wished to give the younger ones some hints as to his mode of preserving sensitive teeth. He believed, of all metallic substances for filling teeth, particularly sensitive ones, tinfoil was best for preserving them in a healthy state. Not that tinfoil was uniformly the best, because it was well known it would wear out; but in an experience of some thirty years he had so often seen the good effects of the use of tinfoil exhibited, that he could scarcely credit it possible that the profession should now regard it with disfavor. He gave some illustrations of young persons, about twelve years of age, with teeth decayed and very sensitive; the central incisors decayed to the nerves on the approximal surfaces; the ends of the roots not fully closed. To preserve these, he removed the decay as far as he could without injuring the pulp; filled them with tinfoil, not pressing it tight. There seemed to be a healthy influence from the tinfoil. In four or five weeks the teeth would be less sensitive; he would then clean the decay closer, and again fill with tinfoil, cutting away the edges so that there would be a good border for the filling, leaving the inside not densely packed. After a few months again refill them, tolerably hard, with tinfoil, and then they would run for three or four years. At the end of that time they would be in such a healthy condition that they might be filled with gold, and last a lifetime. The use of amalgam, as a rule, added considerably to the sensitiveness of teeth. If with young, sensitive teeth, the decay be cleaned close down to the nerve, the tooth is spoiled at once. Where there was a good surface against which to pack it, the gold filling was best; but where the cavity approached a nerve, and the sides were weak, if the preservation of the tooth was the object, tinfoil was the best thing. He believed it had a health-giving influence on the tooth. He knew from experience that a tooth which was irritable and sensitive became less so almost immediately, even when the tinfoil was put in loosely.

Dr. *Franklin* agreed with Dr. Allen as to the importance of using proper food for the formation of teeth. He was satisfied, if that food was known and used which would combine all the elements to build up the system, in equal proportions, no doubt nutrition would be carried on in perfect harmony, and health would be the result. Unfortunately more time was spent in cure than in prevention. The brushing of teeth frequently and regularly, with a proper dentrifice, or without, would do much to prevent decay. He would have a child use the brush from four years old. Some teeth which were filled would be better separated, the decayed surface being simply filed away. They filled many teeth which ought not to be filled, and it required more judgment to decide whether a tooth should be touched at all than to fill it afterward. He had no doubt Dr. Clarke was perfectly right about his filling, so far as children were concerned, although as a permanent filling, it had proved a failure in his experience.

Dr. *Hurd* supposed the object of filling teeth was to make them perfectly solid, (after having first removed every particle of decay,) so as to prevent any thing from getting into the cavity. He wished to know if, (as Dr. Clarke described,) the tinfoil was put in loosely, so that the nerve was exposed to the action of the saliva, what healthy action the tinfoil could have on the nerve? Would the simple placing of a piece of tinfoil in the tooth prevent disease from going on? His practice with such teeth, if possible to preserve them, was to cap the nerve with a small piece of gutta percha, after excavating it thoroughly. His object was to seal the cavity and keep all substances out.

Dr. *Clarke* inquired if Dr. Hurd had ever filled a central incisor, where the nerve would be exposed in cleaning it out, and where the roots had not thoroughly closed, and after getting the nerve bare and capping it, saved it perfectly.

Dr. *Hurd* could not immediately call to mind such a case, but doubted not there were, in his experience.

Dr. *Clarke* had had much to do with children's teeth, and according to his experience, by excavating to the nerve and capping it, in such cases, the tooth was gone.

Dr. *Roberts* said that from the reading of the question it would seem that there was more than one method of preserving teeth, which he fully believed. There was more than one cause of disease also, and of course different causes required different treatment. When he considered that in the mouth of every human being arrived at maturity there were, during the whole process of dentition, fifty-two teeth, and that disease of any one, extending to the nerve, was capable of producing an amount of suffering equal to almost any other organ in the human body, it appeared to him one of the most important questions in the dental profession to consider; and if its importance could be impressed upon the public, as well as upon the dental profession, he believed there would not be half the amount of physical suffering caused by diseased teeth that is met with now. The first lesson to be impressed was the importance of cleanliness from early childhood. With proper attention to this, with the frequent use of the brush and cold water, with a proper dentifrice occasionally, thousands of teeth would be saved that are now lost from neglect. So much for prevention, which is admitted to be in all cases better than a cure. But when a tooth became diseased, and required filling, they came to another mode of preserving it, and upon this subject there were a great many opinions. Results were what they were after; but which was the best material for preserving teeth, whether tinfoil, goldfoil, or amalgam, was a question not always easily decided by the best operators, as cases frequently presented particular difficulties. His practice was, in all teeth where gold could be used, to make a solid gold filling Upon the manner in which it was put in very much depended the preservation of the tooth. Every dentist knew that the filling, to preserve a tooth, should be perfectly tight, so that no air or saliva could penetrate it. He had taken considerable notice of tinfoil filling, and came to the conclusion that there was more virtue in it than dentists were willing to admit; he referred to young teeth, where the dentine was sensitive. He thought it might be accounted for in this way. Much of the sensitive dentine was caused by acid saliva, and tin having an affinity for the acid, was acted upon by the acid, which left the tooth and took hold of the tin, at the same time oxidizing it; whereas gold in these cases, not being acted upon by the acid, would not attract the acid from the tooth as the tin would, thus leaving it to continue its ravages upon the enamel of the tooth. He had noticed in cases of sensitive dentine in young persons, where a tooth had been filled with tin, and another by the side of it with gold, apparently under equally favorable circumstances, the tin would preserve the tooth well, while around the edges of the gold filling decay would continue.

Dr. *Allen* said he could bear witness to the utility of tinfoil filling in many cases. As to permanency, he had known tin filling to last for fifteen years and more.

Dr. *Burras* was glad to hear the virtues of tinfoil filling so generally advocated. He had used it with great success. He differed with Dr.

Franklin in his idea that it did not make a good permanent filling, having known cases that stood forty years. In reply to a question, he stated that the enamel was formed immediately after the crown of the tooth, and before it came through the gum.

After some further discussion of a general character, in which the members were nearly unanimous in placing gold in the first place as a filling, and next to that tinfoil, the subject of the best means of preserving teeth was continued to the next meeting, and the Society adjourned.

NEW YORK CITY DENTAL ASSOCIATION.

The regular monthly (being the first annual) meeting of the Association, was held on Wednesday evening, March 13. In the absence of the President, Dr. *Clarke*, Vice President, took the chair.

The Secretary, in his report for the year, while congratulating the members upon the good will and unanimity of feeling and interest that have been manifested during the past year, urges a more strict adherence to the letter and spirit of the constitution than has heretofore prevailed. No combination of men (he reminds them) in any capacity, can flourish or long exist harmoniously, without fully living up to this principle of rigid conformity to the laws enacted for their government.

THE BEST MEANS OF PRESERVING TEETH.

Dr. *Franklin* read a paper on this subject, after which the Association proceeded to elect its officers for the ensuing year with the following result:—

For President—Dr. Frederick H. Clarke.
" 1*st Vice President*—Dr. John Allen.
" 2*d Vice President*—Dr. W. B. Roberts.
" *Recording Secretary*—Dr. E. C. Rushmore.

For Corresponding Secretary—Dr. B. W. FRANKLIN.
" *Treasurer*—Dr. JAMES T. STRATTON.
" *Librarian*—Dr. W. B. HURD.
" *Executive Committee* (appointed by the Chair)—Drs. FRANKLIN, BURRAS, and ALLEN.

Adjourned.

PROFESSIONAL JEALOUSY.

Paper read by Dr. John Allen before the New York Dental Association.

IN order to elevate our profession it is important that each of its members should contribute his due proportion of aid for the accomplishment of that object. This he can do by first qualifying himself for the discharge of his own professional duties, and by co-operating with, and sustaining other members of the profession who are entitled to confidence, not only in all the general movements that are made to raise the standard, but also to sustain his fellow-practitioners in their private practice so far as he can consistently, in an open, frank, and candid manner. Yet some make it a point invariably to disapprove by insinuations, or condemn outright, every operation they may chance to meet with that has been performed by another; whatever merit may attach to a piece of work, if not done by themselves, is entitled to no credit; they will find some fault, some hook to catch upon, by means of which they will endeavor to sink other operators as low as possible in the estimation of their patrons. If an individual has had services rendered by different dentists, he will find that each one (who is afflicted with this mental malady) will condemn in turn all that has been done by his predecessors; the last one consulted will endeavor to impress it upon the mind of his patient that all his former operations have been worthless, and that those who performed them were mere quacks who knew nothing of their business. But, says the patient, they were highly recommended to me, and some of their work has rendered me essential service; here is a tooth I had filled twelve years ago, and there is one that has been filled seven years, and they seem perfectly good yet. Very true, replies the doctor, they *seem* to be good, but you are not aware of the decay that is going on under those fillings; they are not filled as *I* would have filled them; if they had been they would have lasted you forty years. Well, replies the applicant, I do not wish any thing done this morning, perhaps I will call again. Thus it will be seen that the doctor's efforts to malign his competitors served only to lower himself in the estimation of his supposed patron, for *he* takes his leave fully impressed with the belief that this wiseacre has missed his mark, for he savors as strongly of quackery, if not more so, than those he attempted to revile.

There is a class of patients who from their incredulity and fault-finding propensities, find ready favor with these would-be wise dentists; they complain of every dental operation they ever had performed, whether good or bad. There is Dr. A, says one, who ruined my teeth, for they were all perfectly sound except some little black spots between these front ones which he filed, and immediately after that every tooth in my mouth commenced decaying; oh! he perfectly ruined my teeth. The doctor instead of explaining the matter in an honest manner, by candidly telling the patient that according to his own admission they had commenced decaying before Dr. A touched them, and that his filing the front teeth could not have caused the back ones to decay, thereby defending a professional brother from censure, chimes in at once with a tirade of denunciations against Dr. A for performing the same kind of an operation that he may have performed not an hour before, and may again perhaps upon the next patient that enters his office, without any conscientious scruples whatever.

Now if it was wrong for Dr. A to perform a certain operation, it was equally wrong for Dr. B to perform the same kind of one, in like manner. But professional jealousy does not seem to recognize the true principle of right.

B inserts a set of teeth, C stamps his seal of condemnation upon them. C attempts to extract a tooth and breaks it off, the patient seeks and finds condolence at the office of Dr. D, who thinks it a horrid piece of work. Had you come to me, says the doctor, before that quack got hold of it, I could have taken it out for you at once, but now it is doubtful whether it can ever be removed. Thus each one of this class of dentists is profuse in his denunciations against all his competitors, and equally elaborate in sounding his own praise, for these two opposites always go hand in hand, and in this way many are more active in injuring their profession than in sustaining it.

With these dead weights upon our profession, dental progress is retarded, and ever will be while a part of its members are trying to build themselves up by putting others down.

Why should this be?

Does any one really think that by so doing he will increase his own business or reputation? If so, he is mistaken, for professional jealousy neither benefits *him* who possesses it nor the profession to which he belongs; on the contrary, its withering influence contracts the mind, and often blights the fondest hopes of professional fame.

It is an old saying, that in union there is strength, and it is no less true than ancient. Let us therefore be united in all that pertains to professional excellence, mutually receiving and imparting that which is useful, and gathering gems of thought from each other to place in our own diadems; approving and commending all that is right, and condemning only that which is founded in error.

THE BEST MEANS OF PRESERVING THE TEETH.

Paper read by Dr. Franklin before the New York Dental Association.

The question which has been under discussion before this Society at several of its last meetings, without doubt is among the most important which the mind of a dental surgeon is called upon to consider, viz., "the best means of preserving the teeth."

This question, however, in its strict construction, implies the preservation of the teeth "intact," and not necessarily the means to be employed to arrest disease in the tooth itself, after a portion of its substance has been lost; for when this is the case, at best we can preserve only that part of the organ remaining.

The language employed by our profession, when applied to the preservation of the teeth by filling, would hardly be admissible if used in many other surgical operations, for no surgeon, I imagine, would say he had preserved a hand or foot, when he had just removed one half of either of these organs with the knife. A knowledge of the best means of preserving the teeth from decay or disease, is of the utmost importance, in importance as far transcending the knowledge of treating them when diseased, as a knowledge of the laws of life and health are of more importance than a knowledge of treating disease.

For just in proportion as we understand the causes which tend to disease, are we able to treat disease understandingly, and if all mankind had lived in strict accordance with the laws of their being, the knowledge of physic and dentistry would not be worth acquiring. But unfortunately for our race, they have widely departed from the paths designed for them to tread, until disease is the rule and health the exception. This being the case, it is certainly laudable in every one engaged in the healing art, to labor to acquire that knowledge which shall enable him to mitigate the ills which so abundantly surround us on every hand; and while in the pursuit of this knowledge, the truly benevolent and inquiring mind cannot escape the conviction that all this disease and consequent misery are attributable to a departure in one way or another from the laws of health. The medical as well as the dental profession, from the time that the memory of man runneth not back, seem to have expended their energies in multiplying remedies for existing evils, until twenty-five cents will purchase a panacea for all our ills, and an artificial denture can be had for the price of a good pair of boots. So long as either of these professions shall rest satisfied with treating disease only, they fall far short of the true mission and objects of the healing art. For it is obvious to my mind that the science of treating disease must necessarily embrace a knowledge of all the causes tending to produce it, and once in possession of this knowledge, the withholding of its benefits from our fellow-men, and profiting by their ignorance, can hardly be reconciled with a just appreciation of our obligation to our kind. I am aware, sir, that the educational influences of our times are not particularly favorable to the development of a high order of disinterested benevolent effort; nevertheless, those who appreciate the importance of laboring to accomplish the greatest amount of good in the brief period allotted them here, will derive the utmost satisfaction from the consciousness of having warned their less favored fellows, and by that warning may have saved some from the inevitable consequences of violated law. I trust that our profession will set the noble example to the world, that it is a beneficent as well as a liberal profession. To bring about this desirable end, there must be a full, free, and unreserved intercourse among its members; each must be stimulated by an honorable and earnest desire to excel. When the strife shall be, who will do the most good, help the readiest, and impart the freest, we may reasonably expect that our profession will be relieved from many that now claim membership with it. The most effectual way in my judgment to correct the evils so much complained of, and very justly too, would be, for the better part of the profession to so deport themselves in practice, conduct, and intercourse with each other and the public, as to leave no doubt in the minds of the intelligent part of the community of their superior attainments. That portion of society that have so little appreciation, and less discernment, for a time will monopolize the services of others whose qualifications are in keeping with their low estimation set upon dental operations. The means of preserving the teeth would be acquired by a thorough knowledge of all the causes producing decay. It has been difficult for scientific inquiring minds to reconcile one physiological peculiarity of the saliva and mucous secretions. Judging from the wondrous adaptability of all natural laws to the ends and purposes clearly intended to be accomplished by their legitimate exercise, we reason from analogy that all natural law, so far as it is permitted to act in unison with the objects of its Framer, is life-giving and health-sustaining, and when this result is no longer visible in animated life, it is obvious that a fundamental law has been disobeyed, for nature is not over exacting when we stray not too widely from the true path. The secretions from the salivary and mucous glands in health are more or less impregnated with acids, either of which, alone or in combination, acts with greater or less promptness upon the enamel as well as the dentine of all teeth. This chemical condition of the secretions of the mouth having long been known, many good men have come to the conclusion that decomposition of the teeth, by the solvent properties of these secretions, was a natural consequence and a part of the original purpose and design of our Maker when these destructive elements were incorporated into and became an essential component of our corporeal structure. This conclusion, however logically arrived at, is nevertheless an erroneous one, for I imagine Nature would never have expended her resources in a direction that necessarily tended to mar or destroy organs so indispensable to the carrying out of the great objects and ends of man's creation. Man to fulfil his mission must necessarily go through all the transitions clearly marked out for him—infancy, childhood, manhood, and old age. The withholding from him, while passing through either of these transitions, any of the circumstances upon which development and perfection depend, detracts from the vital forces, and a compounding defect will be visible somewhere, for Nature, like chemical combinations and mathematical axioms, never by the operation of the same laws produces diverse results.

The study of the changes through which the secretions of the whole body go by the transitions of heat and cold, by dense or rarefied air, by the food we eat, and fluids taken into the stomach, by rest or the want of it, by the exercise of the passions, hunger, thirst, joy, grief, anger, fear, or any derangement of the nervous system or vital forces, is intensely interesting to all, but especially so to the dentist, the success of whose operations often depends upon the normal healthy condition of these secretions. Healthy saliva, says Dr. Samuel Wright, of Edinburgh, who is acknowledged to be particularly learned upon this subject, is described as being a limpid fluid, having a faint blue tinge, and a slight degree of viscidity. The quantity of saliva and mucus secreted by different individuals under different circumstances varies considerably in quantity and quality. From Bidder and Schmidt's experiments it is thought that a man weighing 140 pounds will secrete from his submaxillaries about 1.45, and from his parotid about 2.25 ounces troy in an hour; deducting for sleep, the quantity would be about 3 pounds per day. The specific gravity of saliva and other fluids of the mouth varies at different times and from a great variety of causes. Dr. Wright found it always denser after a meal than before it, in the evening than early in the day. "It is commonly thickened by an abundant use of animal diet, by fatty food, and by oily fish. All alcoholic stimulants have a tendency to thicken the saliva, and in large quantities they not only alter its consistency but materially diminish its activity. Its reaction has also been a subject of much discussion and observation, and, in my judgment, this peculiar physiological condition is of more importance to the dentist and to the community than any other fact developed by the experiments of Dr. Wright, whose observations extended to over five thousand different individuals. He says that alkalinity is essential to the proper performance of the physiological function of the saliva. He found the quantity of alkalies to vary considerably, but was of the opinion if at any time it should exceed one per cent. it was to be regarded as an indication of disease. The quantity of alkali is increased during digestion, and diminished in fasting. In fasting the saliva sometimes becomes acid; when from any cause the reaction is acid, Dr. Wright suggests the use of spirits or pepper to be taken into the mouth, under the stimulus of which, in a healthy person, the quantity of alkali is always very much increased. It was found that in smoking tobacco the quantity of alkali was very much diminished, while chewing tobacco is believed to produce the reverse effects. This is probably owing to the stimulating effects of the tobacco upon the salivary glands, causing copious discharges from them, when its reaction is usually alkaline. This statement has been confirmed by Marshall and Garrod. They are inclined to attribute this to the rapidity of the discharge during a meal, and the slowness with which the secretions are formed at other times. They found that ordinarily but two or three drops were discharged by one parotid gland in a quarter of an hour, and that this was acid; but that in half a minute after a morsel had been taken into the mouth, the reaction was neutral, and, within the minute, alkaline. This continued till about twenty minutes after the meal, when it again became acid.

This is accounted for by the fact of the general acidity of the mucous surfaces of the mouth, which is sufficient to overpower the feeble alkalinity of the saliva when secreted in small quantities. When the flow, however, is increased, the saliva more than neutralizes the mucus, and hence we have the alkaline reaction. Saliva has a strong affinity for oxygen, absorbs it readily from the air, and imparts it to other bodies. It has been even said to oxidate pure gold and silver. Dr. Wright gives the following list of salivary diseases: deficient saliva, redundant saliva, fatty, sweet, albuminous, bilious, alkaline, fixed and ammoniacal, calcareous, saline, puriforme, fetid, acrid, colored, frothy, urinary, gelatinous and milky saliva. Each of the above conditions of diseased saliva are more or less deficient in their normal constituent elements, and in some of their conditions highly destructive to the teeth. There are several purely physiological conditions not enumerated, and cannot be considered as diseased conditions of the secretions, such as the arrest or suspension of the action of the glands from a variety of causes, and producing more or less serious consequences. Acid saliva is the most destructive to the teeth; consequently with this condition at least every dentist should become familiar, in order to counteract its destructive tendencies. Piggot says, "The acids with which the saliva is at present known to be contaminated are the acetic, lactic, hydrochloric, oxalic, and uric." He says, "It is a matter of great practical importance to ascertain the presence of these acids in the saliva, as they exert so powerful an action over the teeth, corroding them with extreme rapidity." "Acid saliva may have a sour or an exaggerated salivary odor, both of which are increased by heat. It reddens litmus paper with greater or less intensity." Litmus paper may be obtained at Dr. Chilton's in this city, and of most dealers in drugs and chemicals.

A very excellent and sensitive test-paper may be prepared by bruising purple dahlias, and extracting the coloring matter with alcohol; wetting the paper with the infusion, and drying, it is very sensitive, turning green by the action of alkalies, remaining blue in neutral solutions, and becoming red in acid. For determining the changes which the secretions of the mouth undergo this is much superior to litmus paper. The saliva is impregnated with lactic acid chiefly in gout, rheumatism, ague and fever, and diabetis; with acetic acid in scrofula scorbutus, small pox, and protracted indigestion; with muriatic acid in simple gastric derangement, and from immoderate use of animal food; and with uric acid in gouty affections. When oxalic acid exists in the saliva, its presence will most likely be dependent upon depraved digestion or imperfect assimilation.

Acidity of the saliva is also apt to occur in various other general and local disorders, as in fevers, both typhoid and inflammatory types; in measles prior to eruption and often subsequent; in some fevers the acidity is sometimes so excessive as to corrode the gums and impart a sensible roughness to the teeth; in consumption, in protracted venereal diseases, in rickets, catarrhs, mumps, quinsy, cancers affecting any part of the digestive apparatus, worms, and tedious dentition of weakly or scrofulous children.

The practical deductions from the foregoing facts, are, first, that in all healthy subjects ordinarily, when the salivary glands are under no excitement from food, drink, or other stimulants, both the salivary and mucous glands secrete acids, which are only neutralized naturally by an excessive flow of the salivary glands during mastication and on introducing stimulating or irritating substances into the mouth. If this is the true physiological condition, it must be obvious that the teeth, being bathed or submerged in the acidulated fluids at all times excepting while eating, and for a short time thereafter, are almost constantly liable to decomposition.

It must also be obvious if, by any slight derangement of the system, this acidulated condition becomes greatly intensified, the teeth, as a natural consequence, must, in addition, suffer in proportion to the derangement, and in the ratio of departure from the normal condition of these secretions. In some mental derangements, so extreme is the acid reaction that parts of the body upon which the saliva may chance to come in contact, are excoriated by it. It is to these pathological conditions the inquiring mind must turn to find an explanation of the seeming incompatibility of creative force. By an examination of the normal constituent elements of the secretions of the parotid glands, we are enabled to disprove many erroneous theories in regard to the cause of decayed teeth, and of sensitive dentine. The parotid gland discharges its secretion through its duct steno, whose mouth is situated on the inside of the cheek, nearly opposite or between the first and second superior molars. These teeth, every dentist will have observed, are generally first attacked with disease or decay, and are among the first to be sacrificed. This is but a natural consequence of their location and proximity to the ducts of the parotid glands, the cheek often pressing the mouth of the ducts directly upon the tooth or teeth. When this secretion is normal, its solvent powers attack the teeth, and when their surfaces once become roughened, or disintegration has commenced, the surface of the teeth has much greater capacity of retention than before. Any superabundance of this secretion flows along the most natural channels, carrying destruction in its path, till, finally, it either expends its energies upon the teeth, or becomes neutralized by a more abundant flow of the same fluid, which for a time carries healing in its train by its alkaline preponderance. In the administration of alkalies to correct the acidity of the salivary secretions, if it is designed to be administered as an internal remedy, it is important that the carbonate of soda be employed, and not any of the alkalies made from land plants. Experiments show that the latter acts upon the urinary organs, and is collected and carried off through the urine, while the carbonate of soda taken into the stomach produces almost instantaneous increased alkalinity of the secretions of the salivary glands. All alkaline, however, taken into the mouth, would neutralize for the time the acidity of these secretions. Friction upon the gums with simply brush and water will produce for the time a strong alkaline reaction. It is my private opinion that more teeth could be saved with soda alone, than is now saved with gold as it is employed by those calling themselves dentists in all parts of the country, good, bad, and indifferent, as we find them, for the reason that the best operator cannot save a tooth any great length of time where the tendencies to disintegration by the acid reaction of the secretions are clearly marked, as we often see in decayed teeth having a pearly, transparent, and semicartilaginous structure. What is called dry black rot would probably never produce the destruction of the tooth so long as that peculiar condition existed, for this species of decay, as it is called, is evidence of a suspension of the disintegrating forces, and is the result of the alkaline preponderance of the salivary secretions.

I thank you all for the patient attention given me while reading this paper. I have only glanced at the many points embraced in it, either one of which furnishes facts worthy of the careful consideration of every one who desires to practise understandingly.

In conclusion, I will only add that it is my conviction that if we had lived upon coarse, hard, unbolted bread, made from any of the grains, and otherwise used simple dishes, fruits and vegetables, entirely abstaining from flesh meats and all stimulating drinks and condiments, and were permitted to otherwise follow the clearest dictates of nature, by having pure, uncontaminated air to breathe, with plenty of healthful exercise out of doors, and our labors equally divided, together with a reasonable share of moral and intellectual culture, and other circumstances being equally favorable, (and they are within the reach of all,) —if these had attended our pathway from infancy to manhood, I do not believe there would be further use for any of us in our present vocation.

For "The New York Dental Journal."

LANCING GUMS.

In the February number of the *Dental Register of the West* is a short article headed, "Lancing Gums," which is copied from the *Dental Cosmos;* thus giving it the *quasi* endorsement of two of our leading dental journals; and *on account of its endorsers* allow me to give it a little "airing" in your Journal.

As the article in question is very short, let us quote the most of it—all that bears on the question. "Having read an article on lancing gums, by Dr. J. D. White, in a previous number of the *Dental Cosmos*, in which he advocates lancing the gums before extracting teeth, and knowing how indispensable it is to do so, we would give the following case in illustration of the aforesaid. It happened to us but a few weeks ago; the patient being a youth of about sixteen years of age. He applied to us for the extraction of the first right lower molar. As the tooth in question appeared to be set very firmly, we lanced the gum well all around, except between it and the second bicuspid, where we could not get with our lancet; the forceps were applied, and the tooth drawn quite readily. Upon examining the tooth we were surprised to see the bicuspid firmly united to it by a flap of hard granulated gum; both teeth had thus been drawn simultaneously. So firmly was the gum united to both teeth that it required considerable force to cut it loose from them. * * * We have made up our mind since this occurrence, which at the time we regretted very much, to be more careful than ever to lance the gums well before extracting teeth."

This is truly a most remarkable case *if correctly described*, and the description is very remarkable at any rate. And one of the most remarkable features of it is, that such an article could find its way into two so respectable journals.

Its appearance in the first may, perhaps, be accounted for by its first few introductory lines; but why it should have been copied I cannot so well understand, or even conceive.

But, in the case *as described*, there are several very remarkable features. The first that would naturally strike an old operator is, that a tooth in the mouth of a lad of sixteen should be so firmly set as to require the gum "to be lanced well all around" to enable the operator to remove it; and then to find that "on applying the forceps," he had "quite readily removed" not only it, but the adjoining bicuspid! And again, that he had not only "quite readily removed" two teeth instead of one, but that, too, "simultaneously." Now this seems very strange, inasmuch as we are told that the bicuspid was drawn out by an unlanced "flap" of gum! Now a flap I understand to be a loose, limber piece; and it would seem, if this bicuspid was drawn out by the attachment simply of a loose, limber piece or flap of gum, that the molar must have preceded the bicuspid by at least the fourth, or perhaps a half an inch, and not simultaneously! True, our reporter says it was "hard, granulated gum," and so hard that "it required considerable force to cut it loose from them." This in itself would seem to be a very remarkable condition, especially in a youth of sixteen. Indeed, I have never found such a state of the gums at any age or from any cause; and how granulations could make a gum so hard and so tough, I really cannot understand; still, I suppose we must not doubt that such a state does occur, because our reporter distinctly says that such was the fact; and I remember, too, that another writer in the *Cosmos*, vol. i., No. 2, new series, page 2, (No. for June, 1860,) speaks of the gum and socket being too hard and too strong to be cut away. So much and so high authority, of course, must not be lightly ignored! Still, as I have said, I have never seen any such cases.

But there is another point in this remarkable case still more remarkable than any yet alluded to; and that is the very remarkable fact that a "*flap*" of uncut gum, that by the very minute and clear description of our reporter of the case, could not comprise more than one fourth of the gum surrounding that remarkable bicuspid, should be strong enough to rupture and overcome the resistance of the remaining three fourths of the gum surrounding the same tooth, as well as its entire periosteum, which would be, probably, at least ten times or more in extent, and perhaps twice as strong to an equal extent of surface! A remarkable "flap" of gum that!

When I was a boy I found it laid down in some old school book, as an axiom, that a part is never greater than the whole, and that a whole always comprises all the parts. What an old fogy the writer of that old book must have been! And yet many, many have believed the dogma! While here it is proved that a very small part—a mere "flap of hard granulated gum"—is far greater than the whole! Now the *Cosmos*, and the *Register*, and Dr. Dienelt may believe that a "flap of hard granulated gum" may be strong enough, and firmly enough attached to one side of the neck of a tooth, to rupture all the rest of the gum and periosteum, and to remove a tooth "simultaneously" with the one adjoining it, but really they must excuse me from believing any such stuff. "It may do for the marines, but the old sailors won't believe it."

Then how was that tooth removed? It seems to me that a single glance at the anatomy of these teeth will answer this question.

The lower molar teeth have each two roots—an anterior and a posterior. These roots are broad and flat, and more or less deeply grooved in their central part. If the teeth stand quite close together, as described in the case under consideration, the root of the bicuspid will be found to fit very closely into the groove in the anterior root of the molar; and when the forceps are applied, and an outward and inward motion is given them to loosen the tooth, as the thick border of the molar cannot pass the root of the bicuspid, they must necessarily carry the bicuspid back and forth with the molar and loosen it; and if, as frequently happens, the roots of the molar are considerably divergent at their points, and long enough to pass slightly under the point of the root of the bicuspid, or if they are so much divergent as not to have room readily to pass up between the bicuspid and the second molar, on giving the necessary upward tractile force the bicuspid must come along with the molar.

I have had two just such cases as that described, excepting that when the teeth were out, instead of their being so firmly attached by a "flap of hard granulated gum" as "to require considerable force to cut them apart," they were so slightly attached as scarcely to support the weight of the bicuspid. One of them, indeed, actually fell off by its own weight! So failing to "lance the gum well all around" certainly did not cause the removal of that one.

As this article refers to one in the February number of the *Cosmos* for 1860, by Dr. J. D. White, on lancing the gums, my attention has been given to it; and as, *in most cases*, I believe lancing the gums to be not only useless, but on many accounts decidedly objectionable, I will try and get a little time to pay my respects to that article in your July number.

ABR. ROBERTSON.

WHEELING, Va., March 16, 1861.

AMERICAN DENTAL ASSOCIATION.

At the meeting of the American Dental Association held at Washington, D. C., July, 1860, the undersigned were appointed a committee "to confer with dental practitioners throughout the Union, with a view to the formation of local societies."

In the discharge of this duty the most feasible plan that suggests itself to us for laying the matter before the profession is to take advantage of the facilities afforded by the dental journals.

We would respectfully suggest it to be a self-evident fact, recognized by every reflecting mind, that innumerable advantages must accrue to the individual members as well as to the profession at large, by associated efforts. Nothing is better calculated to break down local jealousies; to establish in their place agreeable and fraternal relations; to foster a desire for individual improvement, and beget that *esprit de corps* which, wherever it exists, has a tendency to elevate the character and standing of any profession. Taking this broad view of the matter, it is deeply to be regretted that our profession should not have had its local societies established long since in every state and town of any size in the Union.

It is, however, gratifying to observe (and we take pleasure in recording the fact) that within the last year and a half a number of local associations have been formed, and we have reason to believe that the movement in favor of a national delegated association has had much to do with the organization of these societies. We trust their example will be followed by the profession in other sections of the country.

Having been appointed merely to confer with the profession on this subject, and as we have directed attention briefly to the advantages of associations, we do not feel it necessary to offer any further suggestions. Trusting that the profession will feel the importance of acting promptly in this matter, we shall be happy to afford any information and assistance in our power that may be desired.

J. W. Van Osten, Philadelphia,
W. W. Allport, Chicago, Ill.,
W. Muir Rodgers, Shelbyville, Ky.,
} *Committee.*

VALEDICTORY ADDRESS.

By William Calvert, D. D. S.

GENTLEMEN,—

Graduates of the Pennsylvania College of Dental Surgery:—

It is but a little while since we met, to renew with some, and institute with others, the relationships that until *now* have bound us together, as pupil and instructor. We met then, and I gave you the greeting of welcome, we have met now to bid adieu.

As the refluent wave recedes from the shore to its ocean-home, so you are about to leave us for home and friends; and at this epoch it becomes my duty as it is my privilege to give to you the parting charge, and sever the relationship (though not sunder the tie) that binds us together. In the fulfilment of this duty what can I say then? The reflections in view of the parting hour—a separation which to some of us will be final—seem to enkindle the keenest sensibilities as well as to awaken and animate the tenderest emotions of the heart of man.

Thoughts not only recur to the past as an abstract retrospect, but as well stand out in anticipation of the future, and the mind is burdened with what it would give utterance to, but much of which time and the occasion must avert. Our intercourse (I speak as well for my colleagues) has been fraught with both interest and pleasure. Ofttimes have we met in the fulfilment of appropriate duty, ours to impart instruction, yours to acquire it. Animated by the same prospective hope, and strengthened in each endeavor by the reward effort ever yields, our united aim has been to discharge with our utmost ability the duties mutually devolving upon us.

The winter has passed—seeming almost ephemeral—that season which upon a former occasion when addressing you, I adverted to as the time for intellectual acquirements or mental culture. This season then with its special appropriateness to your pursuit, though now to be seen only in retrospect, still exists, and the truth that I then presented and endeavored to enforce needs no attestation, but now finds its true metaphor in the position and the responsibilities you assume here this evening.

Hitherto, as I have said, we have met as pupil and teacher, but no longer so—now, and for time to come, we occupy the same foundation-stone of science—co-laborators together.

You have drank from the fountain of truth and science to which humble instrumentalities have led you, and now you are about to go forth, as is man's lot, amid the vicissitudes and activities of life—to *labor*. You have interests allied with both genius and science; heightened by the weight of responsibilities to your race as benefactors, you should have motives high-toned and true, inspiring you with high and lofty aspirations, ardor and earnestness, in the improvement of the talents that have been given you, inciting you to zeal and emulation, for the strife and the conquest.

Hopeful desires, earnest regards, kind wishes, faithful and fraternal friendship from your *Alma Mater*, seek repose in you.

In your out-going, it is not with that knowledge too often acquired from theories alone—even of the most approved—nor, indeed, wholly obtained from the observation of labor and skill in others. This is all well, indeed important, or indispensable I might say; but experience in some things is far better than theory, and of more worth than many treatises or manifold illustrations. Experience or practice in each department of our profession has been your privilege as a legitimate part of our instructions. Not only have you witnessed in the hands of others the various operations and manipulations, but as well have you performed them and repeated the same, until a degree of proficiency has been attained by you, which none but the facilities of collegiate instruction could adequately supply.

While the highest tone of your professional duties may be dispensing benefactions to your fellows—in administering relief to the afflicted, in preventing and arresting disease, there is, moreover, an implied condition of attendant inconvenience and discomfort, if not the absolute infliction of pain. Then let not your sense of suffering, or fellow-feeling for others, be cold, insensible, or callous; but ever dispose the current of your ingenuous, humane, and beneficent nature to those whose call demands your aid and skill; that you may not swell the tide of human woe, but rather that you may calm the turbid stream, and sweeten the embittered cup of the ills of humanity. Still, however, a just sense of the faithful performance of every duty admits of no plea for *in*fidelity, and from the very nature of your duties fidelity becomes the keystone in the arch that will give stability and solidity to your every achievement. Confidence on the one part should ever inspire faithfulness on the other. Then, to be steadfast in every duty, true to every trust, and ever faithful to the commendation of your *Alma Mater*, here publicly ratified to-night, should be your highest professional prerogative.

In your intercourse with patients, and with the world, let your standard of excellence bear an elevated tone, and let all your acts comport with that refinement and dignity of character that belong alone to the true man and gentleman. In a calling such as ours, no unimportant part in acquiring and retaining a practice, hinges upon the minor morals—I mean manners. In life's relations, either business or social, there is scarce any thing to be regarded more worthy of imitation than that cultivated and refined taste indicated in polished manners; so that in your intercourse, if there is a genial, complacent, and commanding deportment, it will fail not to redound both to your praise and profit.

The special duties devolving upon you as practitioners of dentistry have already been appropriately dwelt upon in the round of our instructions, and I need not therefore advert to them here; this much, however, let me say—meet every requisition made upon you with promptitude; direct your examinations with thoughtfulness and thoroughness; execute all your operations with zealous care and circumspection; employ such means as alone by proper judgment and a due consideration of all attendant circumstances, will best insure the most speedy and successful accomplishment of right ends. So act that your life may truly be a combination of integrity, intelligence, erudition and skill, purified in the great alembic of truth, accompanied with gentlemanly deportment, suavity of manners, and polished, beautified, and perfected with the brilliancy of unalloyed rectitude.

In Dental Surgery, the importance of regular and systematic study, of theoretical and practical instruction as afforded in well-regulated colleges, cannot be over-estimated, and is no longer a matter of doubt or disputation. Private tuition, moreover, is recommended and recognized by all, as an important if not essential preparation for the more thorough collegiate course. It may become your duty to assume the office and responsibilities of such preceptorship, and in imparting to others a knowledge of the truths and principles of our science and art, *fail not*, whenever it is your privilege, to reward genius or merit with a prompt, just, judicious commendation. Infused with such a spirit, carry it out into your whole course through life, for many a genius has had the fountain of effort chilled, and many a generous impulse has been paralyzed, for want of genial influences. I think I can, in a measure at least, form a proper estimate of the aspirations of genius, with her fountain of native truth and element of intuitive power, and trust that I can fully appreciate what *should be* her merited reward. Quite sure I am, that instead of lending encouragement, strengthening effort, and giving credence to every achievement, the too common and practical policy of the present day is either to underrate ability and praiseworthy effort, or to withhold the inciting word of merited praise and commendation.

"Since the mountains were brought forth, or ever the earth and the world were formed," activity and labor, or in the more general phraseology, *work* seems to have been the great *motor-force* of the universe; for, whether with outstretched vision we strive to measure the vastness, sublimity, and beauty of the wondrous systems of the universe, to investigate and comprehend their controlling forces or governing laws; whether we look upon the elements in their tranquillity or more majestic fury; at eventide, or at the early dawn, we witness nature's panorama adorned with heaven's imagery, we fail not to discern the divine impress and seal of *His* handiwork; moreover, throughout the created universe there seems wholly a revoking of the idea of inactivity or repose. Nothing within the grasp of finite comprehension is at rest; all matter is not only undergoing the mutations of time, but is ever moving as by some inappreciable and insensible but infinite force. This earth of ours moves through space at the enormous rate of 68,000 miles per hour, and 'twould seem as though from its centrifugal force, it would fling from its surface into empty space the vast ranges and towering mountain heights, menacing the overthrow of man's proudest and most illustrious architectural achievements, as if to level with the plane of a perfect sphere the entire face of the fair planet; and yet it is not thus—the mountains and the valleys, peerless heights and deep caverns, poise and counterpoise, and thus accomplish their work. The rivers dash madly on in their winding courses, restlessly active, as if seeking refuge and repose from their labor and turmoil in the bounding heart of the mother of waters. The ocean in its elements of equipoised forces heaves its bosom till the breaking swell foams upon its face, and the moan ascends, in its labor of flux and reflux, working daily obedience to the celestial orbs.

Man in the fire of his intellect and half-frenzied zeal for ambition, plies mightily the oar by which he hopes to stem the eddies of life, and reach the open sea of unbounded success; and, as by the strength of his arm he wields the shaft in its dip and feather, he is borne onward, so by the bounding strength of mind and giant heart he is impelled to *work.*

The mind seizes *truth* and *principle*, and by the invincible will and power or research, draws around them the alchemy of Science, and by the very law of inherent affinity, combination is effected and solution attained. Could we but call together the accumulated inventions of our country, for a single year or month, and estimate the enormous expenditure of time, talent, and means, of anxious suspense and sleepless nights, of labor in thought and by hand, in maturing the conceptions of the mind of inventive genius, or did we consider the wonderful mechanism of man, giving him power and sway, yea sovereignty over mute matter, the very elements (popularly speaking) becoming his auxiliary, to mould, arrange, develop and perfect—what activity of thought, and what work would be seen included in the out-wrought mind!

The field upon which you have entered is an ample one, although drawing a conclusion from the surface, this may not seem so; still, with the more extended and rational aspect, your profession assumes a legitimate alliance with almost all science. Hence, then, no more should the mind's aspiration be lured from its object, than that the sun's radiant heat should be diminished by the absorbing face of nature's fair landscape with its exuberance of life—or the light grow lurid and dim that breaks forth at the early dawn and sweetly lingers, mid twilight dews, tinting at eventide into mellow beauty the forefront of nature's panorama. As then light and heat thus unceasingly and resistlessly emanate from their great centre and source, so the mind's coherency of element, of concentration, and of power should shine forth, to lighten up the unexplored passes and half-lighted avenues of science, and send a ray (though but of *reflection*) to penetrate the vista of the *deep* and the *obscure.* Nature's vast, yea illimitable laboratory, still invites to work, combinations of elements are yet to be extended and multiplied, and science has her infinitude of problems for man's solution.

Advancing science is but the key to move the deeply enveloped springs that open to the portals of recluse nature. As the unfolding of the bud in the spring time, so is advanceing science in the development and perfection of nature's own laws—it is but penetrating or fathoming, step by step, the wonder-workings of the great Infinite mind.

Science has become, and is more and more becoming the indispensable auxiliary even in the every-day walks or vocations of life. It is the mechanic's rule and foundation stone, the mathematician's line and angle of correction, the artist's pencil-guide, the professional man's text-book, the philosopher's gravitating force, the orator's rhetoric, the mariner's beacon light and point of observation, and the astronomer's lens to fathom the deep azure and penetrate the vista of infinite space. And shall not you, or will not you, I had rather say, members of a scientific profession, be participants in this illustrious and glorious manifestation of light and truth ?

The attainments of life are reached only by assiduous and laborious effort. The moving impulse of ambitious nature stimulates and impels to zealous exertion in the struggle for eminence. Capacity increases with active exercise, and desire enlarges as capacity expands; and not only so, but the very converse of this is alike true. Such is the law of life, ever. In the material world, the field that is well tilled increases in its natural productions, and the vine to which the knife has been well applied in the pruning, brings forth its more luxuriant clusters. If, then, you would reach to high attainments, or exalted position, be unwearied in industry, and unremitting in your labors.

By reason of increased capacity and enlarged desire the mind instinctively turns toward the future, eager in pursuit of prospective gain, and as superior strength is attained, the relative present is a comparison not with what has already been acquired, but with that which may still be compassed.

Attainments, too, are of imperceptible growth. Men do not in the usual succession of events in life, suddenly rise to positions of influence, eminence, or great usefulness; but, as the first blush of the morning light in the eastern heaven is by inappreciable radiation, or as day insensibly merges into the season of repose, so acquirements, the silent working of successive effert, modified by both circumstance and habit, grow gradually, and ripen eventually into a more full and perfect development.

Notwithstanding primeval indolence seems to be a coherent principle of the natural man, yet nevertheless there is no time when his happiness is more complete than when absorbed in such active duties and labors as constitute the interests and pursuits incident to life and of particular vocation—when like a world he moves on, attracted by a common centre. Then it is that individuality, with its subtlety and dross, is forgotten, and the object of pursuit becomes the sun and centre of his system. Then it is that labor is no longer considered a toil, and man goes on progressively, step by step, from the anticipation of hope, to a full fruition in all that makes life most desirable.

Then, gentlemen, obey the mandate of reason, and the incentive of truth, and come nobly and boldly up to your illustrious stand-point of privilege.

I have endeavored, either positively or by implication, to define some of the many duties and obligations that should be found resting upon you, and now allow me for a little to direct attention to a few of the negative points. Go not in the way of the courtly profanations of a perverted manhood, neither smile you upon the archer, whose drawn bow and well poised arrow of deadly point may perchance find in you a victim. Spurn the vampire of idleness, the fiend of selfishness, or a self-complacent contentment. Entertain no ulterior motives, or resort to petty policy in order to secure lucrative ends. Indulge not in disparaging remarks, significant innuendoes, sarcastic invectives, or anathemas against your friends, neighbors, or fellows, and more especially, those allied to you professionally. Avoid sectional feuds of whatever character or kind they may be, and moreover, avoid not only the things that are in themselves open and outright transgression, but even the very "appearance of evil." If you do not, expectations may perish, hope may be vanquished, and alas! when too late, you may discover

> "The Upas hath a poisonous shade, and who would slumber there?"

David's parting admonition to his son Solomon was, "Be thou therefore strong and show thyself a man." Although the ancient record in its original connection wore a different aspect from our separation here to-night, yet, nevertheless, the *truth* is as strictly applicable and potent now as then. Time would fail me in tracing out what might be fully comprehended in this expressive utterance. Suffice, then, for the present occasion to note that strength is an implied element of the true man; not merely physical development, in matter fashioned as man, a combination of bone, muscle, nerve, flesh and blood, possessing vital powers, processes, and functions; but we need as well strength above the material man—strength to sustain the governing motive, to rule the swelling tide of passions, to modify the increasing firmness of habit, and control the constant dropping of circumstance. It has been well and truly said, that in good sense, kindness, and virtue, there is *always strength.* Then, gentlemen, it is strength in and derived from these qualities that you will find needful in imparting tone, force, and efficiency to your actions and lives. They are as silken cords, and the woof with which you may weave for yourselves fabrics of honor and imperishable fame. Your walk through life, the outworking of the man in every-day development, either public, professional, or private, constitutes but the pencillings or hand-writing of your own strength or weakness, and "there is no power of eloquence or force of language that is capable of speaking with the might of life and character."

"If then you're
Ever level and ever true
To the toil and the task you have to do,
You'll sail securely, and safely reach
The fortunate isles, on whose shining beach,
The sights you'll see, and the sounds you'll hear,
Will be those of joy, and not of fear."

In conclusion, I would say to you individually—"Be thou therefore strong, and show thyself a man."

REFITTING TEMPORARY PLATES.

By J. Richardson.

Inasmuch as the utility of temporary sets of artificial teeth is so generally recognized by practitioners everywhere, and as most patients desire them, and as the usefulness of these appliances is commonly very much impaired by the changes which take place in the form of the alveolar ridges during the progress of absorption, it would seem desirable that some available means should be devised to readapt them to the parts without the labor and inconvenience of remodelling the entire piece. While most patients, in a full knowledge of the disabilities oftentimes incident to the use of temporary substitutes, request to be supplied with them, yet there is not an inconsiderable class sceptical of their utility for the reason mentioned, and disinclined to submit to the annoyance of an ill fitting plate, who prefer to forego the use of artificial teeth during the entire period of absorption.

To increase the usefulness of these pieces and render them more desirable, either of the following methods may be adopted to refit, from time to time, with the greatest certainty and facility, such as have lost, in a greater or less degree, their adaptation to the parts in the mouth.

First method.—Take, for example, a full upper set on either gold, silver,* or vulcanite. Secure, in the first place, an accurate impression of the mouth in its changed condition in plaster, and from this a plaster model in the manner usually practised. Perforate the palatal portion of the plate with from eight to twelve holes at different points, and also the external borders, from heel to heel of the plate, at intervals of from one eighth to half an inch apart, and near the edges. These holes may be enlarged to the dimensions of a medium-sized knitting-needle; or if the piece is of vulcanite, to twice or three times that size. On the lingual and buccal surfaces the holes are well counter-sunk with a bur drill. The plaster model, with the central portion raised to form a chamber (and which should be made to correspond, as nearly as possible, in position, form, and thickness, with the chamber in the plate, if one exists) is next heated throughout by placing it over a spirit flame, or in the baking furnace of an ordinary cooking stove, or the muffle of a furnace, and when of a temperature that will barely admit of being taken in the hand, remove and cover the face of it with a sheet of india rubber or gutta percha as prepared for vulcanite work, and press it down upon the face of the model with the fingers. Apply the perforated plate to the model, being careful to secure a proper relation of the two; then press the former down firmly upon the model. To render the vulcanite material still more plastic and compressible, the whole may now be returned to the furnace, and subjected to a uniform heat throughout, when it may be removed, and firm and steady pressure made upon the plate and teeth until forced as nearly as practicable into contact with the face of the model. Portions of gum will be forced through the apertures and out at the borders of the plate; these should be well packed into the countersinks and under the edges of the plate, when the model, with the rubber and plate adherent, may be placed in a vulcanizing flask and incased bodily in plaster. It is then placed in a heater and vulcanized. If all the steps in the process have been carefully conducted, the fit of the plate will be perfectly restored, with no material change in the antagonism, or none, at least, that is not susceptible of ready correction. The union between the vulcanite lining and the plate will be strong and lasting, and altogether impermeable to the fluids of the mouth.

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* It is difficult to vulcanize upon silver plate.—Ed.

In the case of lower pieces, the holes should be made along the external and internal borders of the plate near the margins. In all other respects, the manipulations are the same as those described above.

It is scarcely necessary to observe that, in the use of gold plates, the method is inapplicable whenever it is designed to reswage the same plate for the permanent piece.

Second method.—Perforate the plate, whether of gold, silver, or vulcanite, as before directed, and employing this as a cup or holder, take an impression of the mouth in plaster, pressing the plate up closely to the parts. The plaster forced through the holes and filling the countersinks on the opposite side of the plate, will serve to bind the plaster to the plate and prevent, with cautious manipulation, the two from separating as they are being detached from the mouth. When removed, the plaster impression lining the plate is trimmed even with the borders of the latter and then varnished and oiled. The lower section of a vulcanizing flask is now filled with a batter of plaster on a level with its upper surface, and the impression, filled with the same, is turned over and placed in the centre of the flask, with the edges of the plate touching the surface of the plaster. The plate and adhering plaster are now carefully separated from the model. After cutting out the plaster from the holes and countersinks in the plate, the plaster forming the impression is detached from the plate, and the holes and countersinks filled with wax. The plate is then readjusted over the model, and (the surrounding surface of the plaster in the flask having been varnished and oiled) plaster is poured in upon the upper surface of the plate and teeth, filling the upper ring. When the plaster is sufficiently hard, the two sections of the flask are separated, and grooves formed running out from the matrix to the margins of the flask. A sufficient quantity of vulcanizable rubber is now either placed upon the model or packed in upon the palatal surface of the plate—before doing which, however, the wax filling the holes and countersinks in the plate, (and which was placed there to prevent portions of plaster last poured in forming the matrix from running in and filling them up,) should be worked out with a small instrument. The whole being sufficiently heated, the two sections of the flask are forced together, expelling redundant material. The piece is then vulcanized as in the former case.

The above method, though somewhat more complicated than the former, is quite simple in its details, and will occupy but little more time, and is, withal, more certain in its results. For the idea of forming a matrix substantially as described, I am indebted to Mr. R. A. Mollyneaux, an intelligent member of the present class of the Ohio Dental College.—*Dental Register.*

WHO ARE DENTISTS?

By Wm. A. Pease.

Dentistry as a profession is of American origin. It had its rise in a great public want which nowhere but in the United States has, or could have existed; and there is little likelihood that it ever will exist in any other country. The want that gave it birth, gave it also a vigorous growth, unexampled in any other profession, for dentistry cannot truly be said to date back much earlier than 1840; and as a profession, by which is meant the point of time when dentists felt competent to say to the people that, accidents excepted, there is no longer any need for them to lose their teeth, it is of as recent a date as 1854. As early as 1820 porcelain teeth were made in France, but they were very imperfect imitations of the natural organs; being not very dissimilar in color and general appearance from common porcelain ware. In this country, Washington bought two sets of artificial teeth, both of which were carved out of solid slabs of ivory.

Up to 1840 a gradual advance in improvement was made, which served as a good foundation for further progress. At this time there was a large class of people in this country, possessed of considerable wealth and occupying high social and official positions, who had lost a part, or the whole of their teeth. This loss was severely felt, not only as a means of masticating their food, and as an impediment to articulation, but also as destructive of personal beauty and of manly and womanly expression. Hence, the first demand for dentists was to supply the loss of the natural teeth. This want was happily one that appealed to a people generally educated, ingenious, and fruitful in devices—to natural mechanics; and it was answered by improvement rapidly following improvement in the art of making artificial sets of teeth, till it was soon brought to very great perfection.

Thus we see that the first want, *for what was, and is still called by many, dental skill*, was for mechanics—persons skilled in working and manipulating gold and silver and fashioning them into plates to fit the mouth—to which teeth were to be attached. This art was justly highly appreciated, because it was very useful, and gave dentists a high position in popular estimation—*it opened the way for dentistry as a profession*.

About 1840 it became obvious that dentistry would soon present a field for honorable and lucrative employment to men of general and medical education. The Baltimore College had just been established, and it was thought that, by scientific investigation, means would soon be found to preserve the natural teeth, and thus greatly diminish, if not entirely dispense with the necessity for artificial substitutes. Then followed an active course of experiments and investigations to determine how far plugs would protect the teeth from further decay. Many of these experiments were necessarily imperfect and ill-directed, and it soon became obvious that people had more confidence in mechanical than conservative dentistry, and neglected their teeth. This neglect was ruinous; the nerve became exposed, toothache supervened and forced them to apply to the dentists for relief. The remedy was, therefore, either to extract the tooth, try to quiet and save the nerve, or to destroy it at once. Mechanics chose the former, because it enabled them to make a substitute, dentists the latter, because they considered it an opprobrium to be unable to save the tooth. Their first efforts, it is true, though apparently successful and gratifying, too often ended in a mortifying failure; the capped or treated nerves died, and dead nerves generally produced such a crop of intractable ulcerations, or gumboils, as to disgust the community and dishearten dentists, who then feared that mechanics must still be necessary.

At last, in 1854, a rational theory was promulgated for preventing ulceration and curing ulcerated teeth, and about the same time, as if to fix and make that the initial point for the advent of dentistry as a profession, several improvements were made in preparing gold for dental purposes that enabled dentists to make much more dense and durable fillings, and also to build up and restore the form of broken teeth. The dental profession was then fairly established; in theory at least there was no longer any, or but little need of mechanics or manufacturers of artificial sets of teeth; because that unfortunate class of persons who either ignorantly or criminally neglected their teeth until the nerve became exposed, could still have them treated, plugged, and made much better and more serviceable than artificial teeth. Now, after a more than six years' practice of the new method of treating diseased teeth, *dentists feel warranted in saying to their patients*, "*there is no necessity for losing your teeth.*" Teeth can be so thoroughly plugged that it will be as difficult to remove the plug as it would be to cut away a corresponding portion of the tooth. Even in those complicated cases where the tooth aches, where there is a swelling of the face, a gumboil, or a discharge of pus, the pain can still be quieted and the ulcer healed.

From these considerations the public will see there are two classes of dentists, or rather, there are dentists and mechanics, from whom very different treatment may be expected. The one, basing their practice on a knowledge of the human system and the laws that govern it, will preserve the natural teeth; they will refuse to extract them, simply because they ache, or there is a gumboil at the roots; or, if they do it, they will do so reluctantly for persons who persistently demand it, and refuse to submit to the necessary treatment to preserve the teeth; the other, conscious of their inability to treat and save the teeth, having little more than mechanical skill and manual dexterity, will as persistently advise to have the teeth extracted, or they will adroitly lead the patient to demand it by discouraging remarks on the difficulty of the case, or by talking of the danger of ulceration, or what they call disease of the roots; they act on the maxim that dead men and extracted teeth tell no tales. The patients of the first preserve their teeth—their faces unmutilated and their natural expression of countenance and their individuality; the patrons of the other get a shining set of white teeth, which every one knows to be artificial, in return for which they are but imperfectly cherished; the breath becomes offensive, the mouth falls in, the nose sticks further out, the lips shorten, the lips and cheeks become wrinkled and shrivelled, the cheek bones assume an unnatural prominence, and they look prematurely old. The one, feeling little more responsibility resting upon them than what is common to mechanics, act accordingly; they persistently seek for a sale of their wares, talk loudly and promise much; they obtrusively thrust forward their mechanical contrivances and press pieces of artificial teeth on the attention of the public, all of which the other as studiously avoid. The one never rises above the customs of a craft or trade; the other is governed by the rules of a profession.*—*Dental Register.*

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* We would recommend this article especially to those individuals who are seeking to elevate Mechanical Dentistry to *professional* importance.—Eds.

EDITORIALS AND CUTTINGS.

VULCANITE AND ITS VICTIMS.

II.

We hoped sincerely, when we concluded our first article under the above title, that before the first of April we should have obtained sufficient data to enable us to report the progress of the comedy which we then announced as *underlined* in the bills of the American Hard Rubber Company. But another quarter has passed on its way to eternity, and still the curious performances of this *Company* continue to trail "their slow length along," and "drag at each remove a lengthening chain." This is their fault, not ours: we supposed that during the winter season they would have produced their *star* actor, Mr. John T. Toland, in "one of his best pieces;" but here we are, the season nearly over, and as far as we know there is no contract made, and Mr. J. T. T. is just as far from any arrangement with them as ever. How is this, gentlemen? Do you find that there are individuals who cannot be bought, borrowed, begged or driven; and are we to suppose that the new play is to be a failure? It looks dreadfully like it; and in fact we would not be astonished to see Mr. J. T. T. setting up a rival establishment of his own. But we shall learn, if we live long enough, exactly what is going to happen, and must only wait with patience, and suggest to our readers to practise Christian forbearance, and rely upon our promise to keep them acquainted with the ins and outs, the twists, and turnings, and mazy windings of this remarkable Company—manager, theatre, stage, green room, flats, side-scenes, wings, foot-lights, traps and all. But we did not rely entirely upon the public exhibitions of this *Company*, nor upon their "Advertising Sheet;" knowing a trick worth two of that. Being in fact slightly experienced among these theatrical characters, we took the trouble to send a reporter round *behind the scenes*. Perhaps you don't believe it, gentlemen of the A. H. R. Co.: well, let us see what our reporter has discovered. But previous to enlightening you and our numerous friends in this regard, we have a word to say concerning a few remarks made by your stage-manager in the last issue of your "Advertising Sheet." On page 181 of the said A. S., (we like to be particular,) he answers our first article: *imprimis*, he accuses us of devoting eleven pages to answering a short paragraph in the A. S. aforesaid for November. CUVIER was once requested by an individual to give an opinion on a new definition of a crab, viz., "the crab is a red animal, which walks backwards;" CUVIER replied that it was perfectly correct, except that the crab was not red, was not an animal, and didn't walk backwards. Thus we did not devote eleven pages to answering any article, we did not answer any article, and we did not write eleven pages on any one subject. We wrote seven pages on "VULCANITE AND ITS VICTIMS," which were not in answer to an article, but defending our name against a consecutive series of misrepresentations, and presenting to our readers some interesting facts we had collected, and of which we still have a choice collection stored up for future use. We wrote four pages entitled "*Red Oxide of Mercury* vs. *Bisulphuret of Mercury*," which were not in answer to any article, short or otherwise, but *were* written in answer to an assertion made by the agent of the A. H. R. Co. at the Dental Convention at Saratoga last summer; and from circumstances which have occurred since, we flatter ourselves that *this* answer has fully satisfied the appetite of the A. H. R. Co. heretofore mentioned, including their whole army of agents, stage-managers, property-men, *rope*-dancers and *supes*. Again, admitting that we *do* like impudence, as we so stated, we are now satisfied that it is an extremely fortunate thing for us that we are so constituted, for we should otherwise be made dreadfully uncomfortable by the amount of it we are constantly compelled to swallow in our intercourse with these *vulcanite* cohorts.

In reply to the inference of the editor of the A. S., that if Mr. Toland should be defeated in his suit with the A. H. R. Co., "he will be left to settle his own bills for cost," we will only say that we never contemplated a result which would place Mr. T. in such a position. As to the congratulations with which the A. H. R. Co. favor us upon page 172, we would advise them to remember that *the end is not yet*, and "there's many a slip 'twixt the cup and the lip." We asserted, and we *re*-assert, that if the Vulcanite Base "*were capable of the complete moral regeneration of mankind*," our natural distrust of the A. H. R. Co. would prevent us from purchasing rights at $100 each; we don't set ourselves up for martyrs, and that would be martyrdom. As for our "assailing the motives of the large and respectable number of licensees of the American Hard Rubber Company—"no more of that, Hal, an thou lovest me." We observe that the large, and respectable, &c., of the &c., don't send the A. H. R. Co. letters of recommendation—*caracthers* in fact—for the Vulcanite Base. We only suggested, what looks exceedingly reasonable, that those who *did* might be admitted as *dead heads* into the performances we mentioned; if they are not, they ought to be; they eminently deserve it. As to our losing friends by our course in this matter, we find that the reverse has been the case. The dental profession are fully capable of appreciating the efforts of those who tell the truth and seek to discover to them the snares which are being spread to entrap them; such has been and will be our course in this matter, and from our daily correspondence with the profession, we are fully satisfied that it is the wisest as well as the most honest course.

We will close this portion of the subject with a word of advice to the editor of the "Advertising Sheet," which we think we have named once before. At page 171 of the same number before quoted, he takes the liberty of putting words into our mouth which we never uttered; as we think by this time we have convinced that sapient gentleman that we know nearly as much about the English language as he does himself, we will only inform him that when we run short of a word, we will send over to him and borrow one, without troubling him to supply us until he is called upon. We said exactly what we intended to, no more and no less; and in order to entirely prevent future misconception of our language, we will repeat the sentence as before:

"*Now in looking over the list of parties who have purchased rights, published in the Company's 'advertising pamphlet,' we find about three hundred names out of some five thousand dentists in the United States; and out of these three hundred only* FOUR *are citizens of New York city. This proves one fact which all the* RUBBER *in the Company never can rub out; which is, that* HERE *the profession is too well posted to fall into the snares of the A. H. R. Co.*"

There, Mr. Editor, we will circulate it a little more, since you are so anxious about it. But we must qualify it, by inserting eight in place of four, as the Company by drumming about have succeeded in adding four to the list, including Dr. Dieffenbach, who we *know* never paid a dollar for his right, and others of whom we have pretty well-grounded suspicions. Now, Mr. Editor, aren't you sorry you spoke?

As we said in the early part of this article, we sent our reporter into the theatre of the A. H. R. Co., and having an idea or two of his own, he obtained admission "behind the scenes." Here, as he expected, he found every thing in confusion; the sudden *exposé* made by the New York Dental Journal had completely nonplussed the unhappy manager, and he was rambling about in a condition of hopeless imbecility, painful to witness; and then the fugleman. "Alas! poor fellow; we knew him once, good reader; he was a fellow of infinite jest, of most excellent fancy. Where be your gibes now? your gambols? your flashes of merriment, that were wont to set the table on a roar? Not one now, to mock your own grinning? quite chap-fallen?" But we digress, led away by our past remembrances. So our reporter, obtaining a quiet corner where he could take notes unobserved, proceeded to look about him. The war had evidently been "carried into Africa," for the Great Mogul of the Company had been sent for, and presently that compact Teuton made his appearance. After considerable consultation, and more noise, it was finally concluded that *Roberts* was no-go; *Toland* wouldn't wash; and the hopes of the Company must rest upon another suit, now in progress in the diminutive but highly respectable state of New Jersey, that province not having yet seseshed. Now this fact did not amount to any very large sum, interest included, but our reporter fortunately picked up some additional information about the matter, which, taken in connection, makes it about the largest thing of the season.

Now gentlemen of the A. H. R. Co., and all your aiders and abettors, "a chiel's amang ye takin' notes, an' faith he'll prent 'em;" our reporter is rapidly gathering *evidence*, a business in which he is becoming *nearly* as expert as *yourselves*, and as soon as we have collected sufficient for our purpose we shall lay the facts before the profession in our happiest manner. We would advise our readers, however, as we cannot tell what may happen before another issue of the Journal, that they need not be alarmed if they see the A. H. R. Co. breaking out in a new spot; they may be sure that it is that same old *nigger* friend Toland started, only he has got round to another end of the wood-pile. He may be presented with an extra shower of fireworks; Mr. Manager may blow his loudest trumpet; Mr. Fugleman may crack his most pungent jest; Ropes may issue his most discursive handbills; it will still be that inevitable *nigger*, whitewash him as they may; and just as sure as he shows enough to draw a bead upon, he is a deceased colored individual.

The editor of the "Advertising Sheet" which we have had occasion to mention once or twice in the Journal, honors us by terming us in the last number of his entertaining pamphlet, "*a second Daniel come to judgment.*" Now we are not certain whether the editor means this compliment in the Biblical or Shakespearean sense, not being aware of his habits. Supposing him, however, to be a church-going man, we will first look at it from the Biblical point of view. True, Belshazzar has had his feast, and the handwriting has appeared upon the wall, and all his fuglemen and bear-leaders have been unable to explain it; and we being brought in from our studios and our duties have read it with ease. Thus it runs:

VERMILLION—VERMILLION—VULCANITE—VICTIMS.

These words, which we embodied in our former article, and which have so alarmed the modern Belshazzar, are from the ancient *sanskrit*, and translated into the vernacular, mean as follows:—*Vermillion*—"*Your game is played out;*" *Vulcanite*—"*Save me from my friends! you have been weighed in the balance and found wanting;*" *Victims*—"*The profession smell an enormous rat.*"

But although we have given this interpretation, we have as yet seen nothing of the "scarlet" clothing, nor even of the "chain of gold," not to speak of our being the "third ruler" in the Hard Rubber "kingdom." Instead of awarding us these honors, the A. H. R. Co. are, as we see by their own threats, conspiring to cast us into the lion's den of public opinion; but we are sure that our faith in the sense of justice of the profession will be an ample safeguard, and that we shall come out unscathed, and possibly have the pleasure of seeing these envious detractors thrown in themselves; when we are quite certain the lions, having no "red oxide of mercury" to interfere with their mastication, would instantly make a satisfactory meal of them; whether they would prove wholesome to the animals is doubtful.

Now let us see what Shakespeare says about it. "A Daniel! A second Daniel come to judgment; ah! Infidel, we have thee on the hip; we thank thee for that word!" True again; here have this Company, which we will personify under the name of *Shylocks*, been drawing their innumerable pounds of flesh from the dental *Antonio* for a series of years; and now we have come forward, as our flattering friend tells us, "a second Daniel," and have given the profession the truth in the matter, and proved the absolute impossibility of these *Shylocks* cutting their pounds of flesh, under the restraints which the law imposes upon them. Again we say, Mr. Editor, "we thank you for that word," and if your comparisons are always as well selected, we shall be happy to devote eleven pages every quarter to analyzing them.

To be continued.

WHO IS RESPONSIBLE?

An article with the above heading appears on the one hundred and seventy-third page of an "Advertising Pamphlet" published in this city, and as it only involves an abstract question of equity, and of course has no special reference to any case at present pending, we are inclined to examine it from this stand-point, considering it only as an abstraction. If the question should hereafter be followed up to an actual *bona fide* case, we may possibly be tempted to discuss it in a different manner, from the "light which may then be in us." Here is the question, (as stated by the editor of the A. P. aforesaid,) "Who is responsible for the failure of an artificial denture—the 'surgeon' who takes the impressions, fits the plate to the mouth, takes the articulation, supervises the arrangement of the teeth, &c., or the mechanical workman who *simply* performs the labor thereafter?" We request our readers to mark how this "leading" question is put; notice the quotations which enclose the word surgeon, and the bearing of the word "*simply*," which we have italicized for better reference. Ah! Mr. Editor, it would not take a Philadelphia lawyer to guess the drift of your argument, from your method of putting the question. This same question, which the unprejudiced editor says is "easy of solution," he occupies two pages of his valuable pamphlet in his efforts to solve. Now, let us see how he solves it. He takes the ground foreshadowed by the question, that the "surgeon" is responsible and not the "workman." Here is his first argument :

"*Who would be responsible for misfitting plates, in case the 'surgeon' employed a mechanical workman in his own laboratory? Every one must see that the employer, and not the employee, would sustain all losses arising from want of adaptation in every particular, no matter from what cause or causes, or which of them being in the fault. This is the custom, and there is reason why this should be the case. In the first place, all mechanical workmen receive a price for their services, which precludes the possibility of their being held responsible for any share of the losses, either by bad debts or bad 'fits.'*"

Granted, Mr. Editor, that the workman is not responsible in the case given, what has that to do with the question you are considering? In the one instance, A hires a workman, pays him his salary, and if dissatisfied with him, can discharge him from his employment: in the other, A, the "surgeon," goes to B & C, the mechanics, and engages them to do a piece of work, of which they are, by their own announcement, responsible for the *mechanical execution.* That is, a model is handed to them, and they agree to furnish a piece of work, in every respect similar to that model: for if the *mechanical execution* is perfect, it involves the necessity for the exact imitation of the model. For example, if A, who models in plaster, carries a plaster cast to B, who cuts in marble, B is obliged to furnish a satisfactory imitation of the cast, or his work is thrown on his hands.

Therefore, by the admission of the parties aforesaid, that they are responsible for the "mechanical execution" of their work, they become *ex necessitate* responsible for its similarity to the model furnished them, and of course (in the instance of a set of teeth) for its adaptation to the mouth, supposing the adaptability of the model. The office-workman can be discharged from his situation; but who can discharge Messrs. B & C from their position if their work is a failure?

The information which Mr. Editor kindly and gratuitously gives us, that "every dentist who manufactures his own mechanical work, sometimes fails," is undoubtedly extremely interesting, but, we fancy, not entirely new, and certainly does not have any very direct bearing upon the question at issue; therefore we will take the liberty of skipping some twenty-five lines on page 173 of this A. P., and we find ourselves brought up with a round turn by the assertion that "*the relationship existing between the 'surgeon' and the mechanic undergoes no change by the former sending his model into an adjoining building, or having the same work done in his own office by the same workman. It requires no 'code of dental ethics' to settle self-evident truth.*"

Now, Mr. Editor, this assertion, although a pretty bold one, is nothing but an assertion after all; and without wishing to detract from your capacity to judge the case, we humbly assert that we "deny the right of jurisdiction." You may give us as many *opinions* as you please, but we profess to have something to say as regards swallowing them. As to the assertion, it is simply nonsense; does the relationship between a gentleman and his hostler undergo no change, when the hostler sets up a livery stable next door? We are now upon an abstract principle —whether the relationship between a master and his hired workman is the same as that between the same master and an independent mechanic in the next street. It is absurd.

Here we have a slight admission: "*It is true, if culpable neglect or gross carelessness on the part of the mechanic should render his work useless, he clearly is bound to make it good; but in unavoidable circumstances, in which no human foresight could prevent the consequences, and which would be liable to occur under the 'surgeon's' own manipulation, he alone must sustain the loss.*"

Much obliged to you for nothing, Mr. Editor, but who is to draw the dividing line—the individual who made the "assertion" we quoted above?

We regret to learn from the editor's closing remarks, that the business of the mechanical dentist is so poor in its returns as to render the chance of his making any thing more than a scant living exceedingly dubious. And we do hope that something will be done for them; we would suggest that a "*society for ameliorating the condition of indigent mechanical dentists* should be established at once. But why enter this business? or why not charge enough for your work to enable you to live more comfortably; and then do your work as it should be done, and as you advertise to do it?

We are aware of the editor's desire to elevate "mechanical dentistry" to the rank of a science; and are not at all surprised to read his opinion that "*the time is fast approaching in our large cities when these branches must necessarily become separate and distinct departments*;" but we fancy that his statement of the lugubrious condition which prevails in the business of "mechanical dentistry" would tend rather to deter parties from engaging in it.

We have discussed this question, rather to expose the weakness of the arguments used by the editor whom we have quoted, than to present any views of our own upon the subject; but since we are upon the subject, we will give our readers our conclusion, after examining the question carefully in all its bearings. It is this: any party in business for himself, who undertakes the performance of any labor in the line of business in which he is engaged, is responsible for the exact similarity of the result to the model or description furnished him.

And we give this as an opinion only—our readers may take it for what it is worth.

CHLOROFORM LINIMENT FOR DENTAL PURPOSES.

Take the white of an egg, and add an equal bulk of chloroform : let it digest four hours at an ordinary temperature, when it is fit for use. Apply to the gum, immediately above the aching tooth, by saturating a piece of lint, one half inch in length by one fourth in width. Upon this place a second piece of lint, larger than the first, to protect the lips, which must be allowed to carefully fall upon the two, so as they may retain their place. We have found this an invaluable relief for such disturbances as are not dependent upon fully-developed inflammation, such as neuralgic disturbances and the first stages of periostitis. A more powerful liniment can be made, by taking one part of white of egg and four parts of chloroform. Put them in a bottle and plunge it in a water-bath, at a temperature of from 120° to 140° Fahrenheit—gelatinization takes place in four minutes. This preparation is to be rubbed on any painful part, when great relief will be experienced. The slow cauterization it produces, and the protection of the part from the atmosphere, render it a very powerful counter-irritant, as applied to the gums in the manner described. We have found it in many cases highly serviceable, and recommend it to more general use. The cold preparation is, perhaps, the best and easiest made ; and when a decided effect is required, it should be repeatedly used.—*American Journal of Dental Science.*

DISEASES OF THE GUMS.

M. Marchal has recently laid before the Paris Academy of Sciences, an account of a disease of the gums, which, although it is rarely or never fatal, causes much suffering, especially at the moment of eating; it gives an offensive odor to the breath, and very often results in the loss of the teeth. It first loosens the teeth, and finally causes them to fall from their sockets; and from this circumstance, Dr. Marchal has designated the disease "expulsive inflammation of the gums." In most cases, the locality of the disease is the inner dental portion of the gums, but it sometimes appears in the dental sockets. In some instances, it takes the shape of an abscess. It seems to be hereditary, but sometimes arises from exposure to a damp cold, from the presence of tartar around and under the gums, from a foul state of the stomach, or from pregnancy. The remedy is a local application of iodine.

POISONOUS CANDY.

Two cases in one family have recently come under our observation of quite severe symptoms of irritant metallic poisoning, from eating the richly-colored candies offered for sale in the shops. The yellow-colored candy (probably from the presence of orpiment) appears to have been the active agent. Cannot measures be taken to prevent this dangerous practice? It is well known that children are liable to similar attacks from sucking off the paint from their colored toys.—*Chicago Medical Journal.*

The *Chemist and Druggist* says that a new metal named Cæsium "has lately been added to the already long list of those substances. Cæsium was discovered by MM. Bunsen and Kirchloff. These gentlemen found that certain lines contained in the spectrum produced by burning chlorides in alcohol afforded a most delicate method of analysis. The rays and lines shown by the chlorides of the alkali metals are perfectly well defined, while those of barium, strontium, and calcium are more complicated. Sodium shows a yellow ray, polanium a purple, and lithium a red ray, the absence or presence of either ray indicating the corresponding presence or absence of these metals. M. Bunsen found that in examining the products of the mineral waters of

Krewzuaeh, a new ray made its appearance, indicating the presence of a new metal. They have since proved the truth of their supposition by evaporating twenty tons of the water, which had yielded 250 grains of the platinum salt of the new metal."

The same journal gives the following on the chemical constitution of cast iron and steel: "Fremy confirms the observations of Caron relative to the influences exerted by nitrogen over the phenomena of *steeling;* he finds that the *humus*-looking substance which is left after treating cast iron with bichloride of copper disengages, when heated, a considerable quantity of ammonia, and shows an analogy with certain derivatives of cyanogen. He regards cast iron and steel as combinations of metal with a compound radical comparable to cyanogen, and which, like it, is produced directly by combination of carbon with atmospheric nitrogen.

We have received a copy of "The Dentist's Memorandum: a Book of Engagements, and Manual of ready reference, for 1861," published by John T. Toland, Cincinnati. This is a compact little tuck pocket-book, neatly gotten up, and forming a very admirable and useful assistant to the dentist. It is arranged for every hour in the day from eight o'clock A. M. to five P. M., so that every appointment can be entered in its appropriate place. It contains, also, a manual of some twenty pages, wherein are recorded formulas, recipes, concise information concerning diseases of the teeth, &c., &c., comprising, also, a calendar and note-table, and is altogether *multum in parvo*, an exceedingly valuable little volume.

By a printer's error in our January No. we were made to designate Dr. Clark's paper, upon "making dies and swaging plates," as the *second* prize essay; it should have been the *first.*

W. B. ROBERTS,

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SUCCESSOR TO J. M. CROWELL.

☞ Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins,	20	cents
do do do with holes	15	“
Single gum-teeth for vulcanite or cheoplastic base work with pins	15	“
do do do plate work	15	“
Continuous gum teeth, with Roberts' one pin,	8	“
do do with two pins,	8	“
Plain teeth for vulcanite or cheoplastic base,	8	“
do for plate work	8	“

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor; and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as to go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, do do	1 00
Platina, do do	6 50
Etching, Enamel, per box,	1 00
Pure Gold,	1 10

Carvers or Knives for continuous gum-work, etc.

Metals and Minerals.

Gold plate 18 carats,	$0 90	per dwt.
do for clasps,	90	"
Gold solder, 18 carats,	90	"
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Pure Gold,	1 10	"
Pure Silver Plate,	2 00	per oz.
Precipitate of Silver,	2 00	"
Townsend's Cement,	1 50	"
Silver Solder,	9	per dwt.
Bismuth,	1 50	per lb.
Asbestus,	38	"

Tin, lead, zinc, and all other metal at the lowest market prices.

Vulcanizers.

Small size alcohol-burning machine, 2 pieces	$18 00
Large " " " 3 "	20 00
Small size gas-burning machine, 2 "	18 00
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Amber Base for Vulcanite,	8 00
Rubber Base do	3 00

Furnaces.

No. 1, Large Furnace, with three muffles, $18 00. Muffles each,	
Boxing and cartage,	1 75
No. 2, Furnace, with three muffles, $16 00. Muffles each,	38
Boxing and cartage,	1 50

Dental Chairs, Rolling Mills, Roberts' Wisdom Teeth Forceps, and all kinds, of the most approved make and style. Excavators, pluggers, plate punchers, etc., etc.

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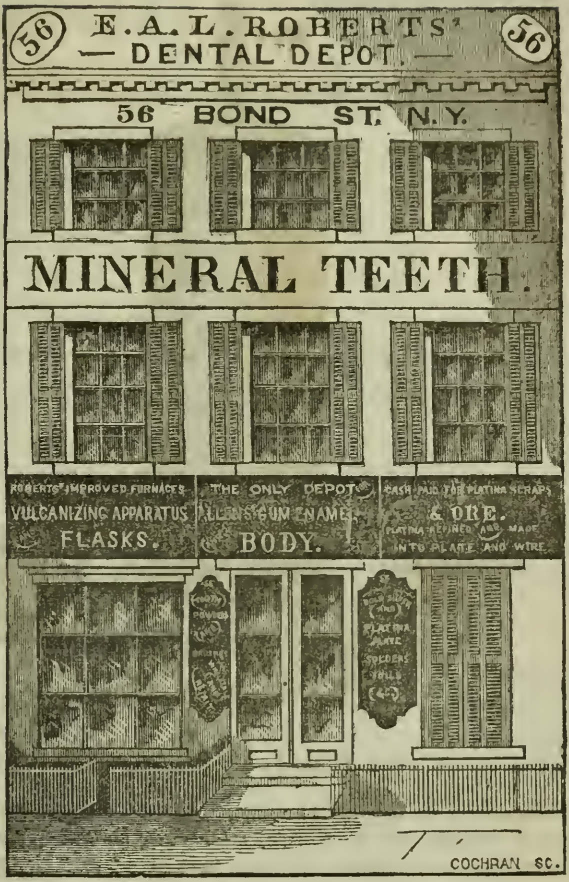

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Gum, per ounce, troy weight,	$2 00
Body, " "	1 00
Platina, " "	6 50
Pure gold, " "	1 10

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ROBERTS' Gum-teeth for plate-work,	$0 15
" Plain " "	0 8
" Continuous gum, 1 pin,	0 8
" " " 2 pins,	0 8
" Blocks or sections for vulcanite base, or cheoplastic work, with pins,	0 20
" " with holes,	0 15
" Single gum-teeth for vulcanite work, with long pins,	0 15
" do do with holes	0 15
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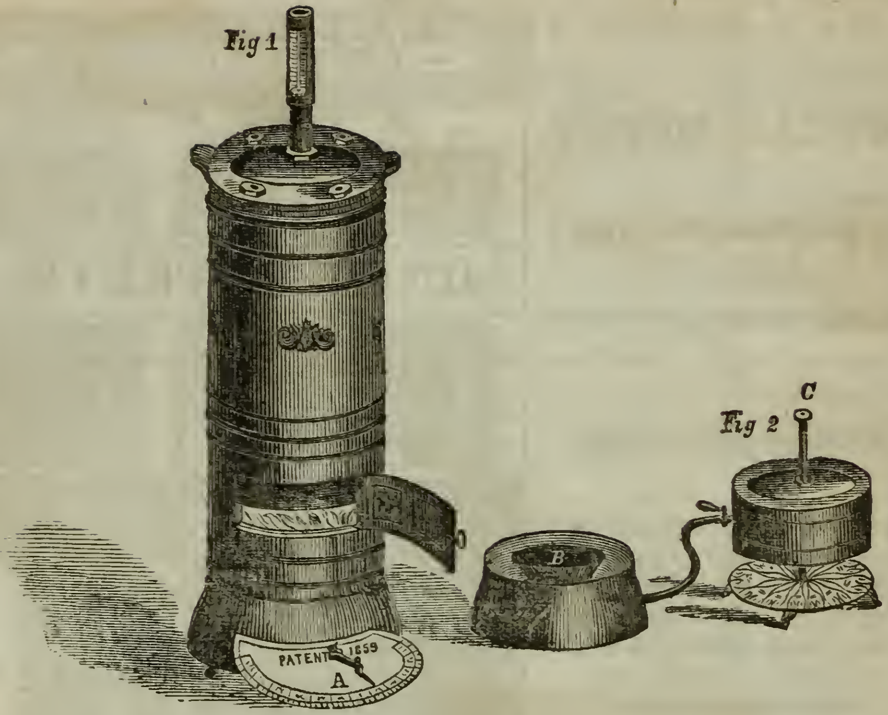

E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top; the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

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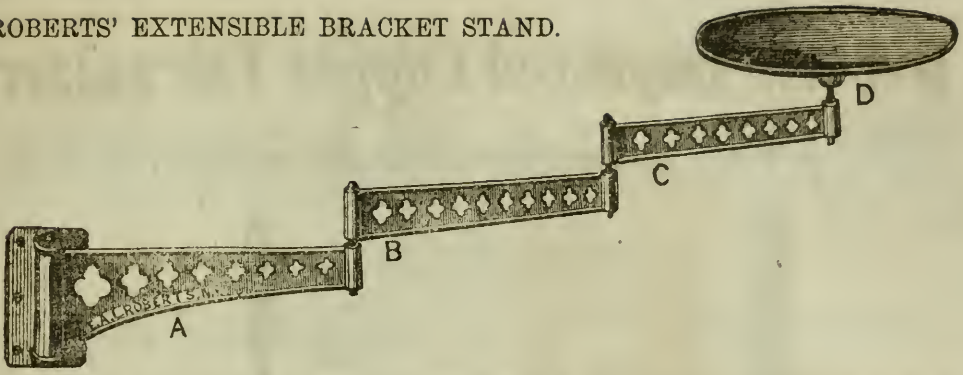

This very convenient stand is made of three segments of ornamented iron, A, B, C, (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equaliy and firmly adjustible to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

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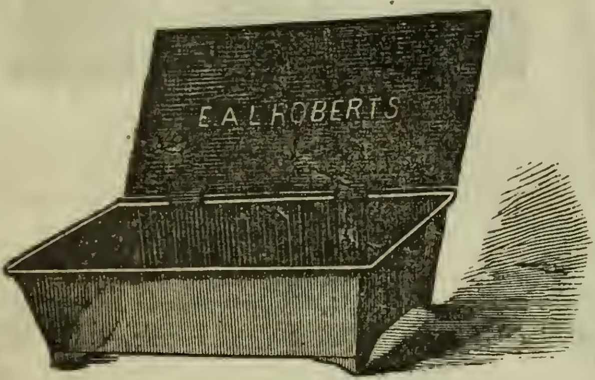
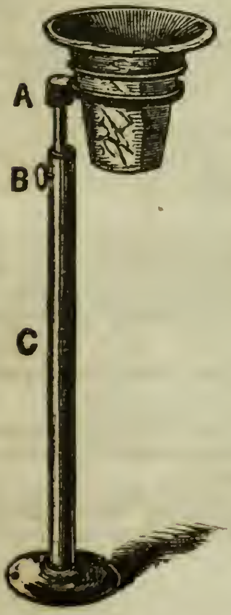


The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

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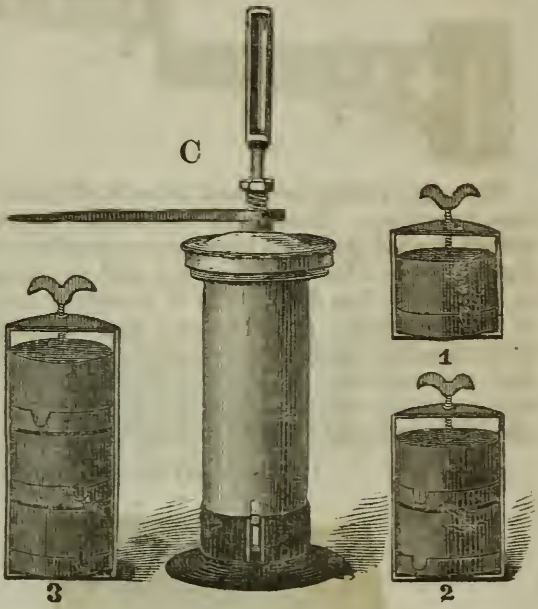
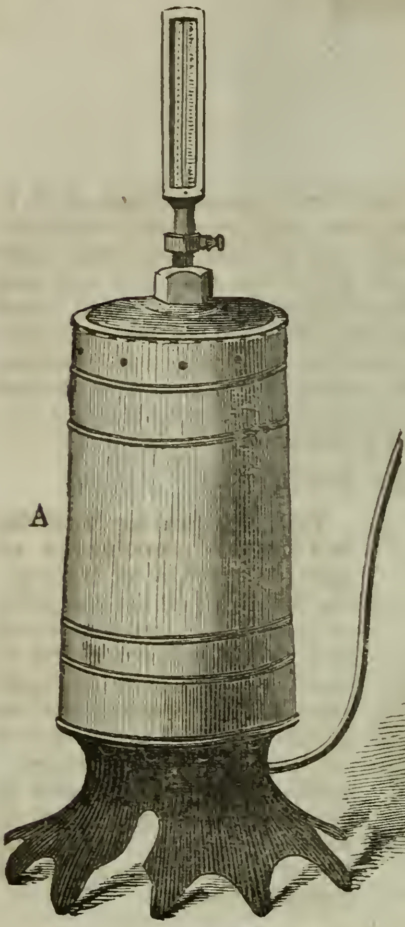
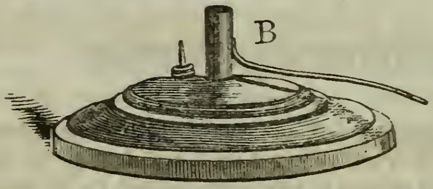
We now offer an assortment of Flasks, viz.: Hawes', Sectional, and others, moulding rings of all sizes and styles, melting ladles with adjustable handles—an improvement of our own—with a full assortment of furnace and melting tongs.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.







PRICES.

No. 3, large size	$12.00
" 2, second "	10.00
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Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.50
Brass cylinders instead of sheet iron extra	1.25

These machines are the most compact, light, and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal, dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2, second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

The cover of each machine has a plug of fusible metal screwed into it, which fuses and allows the steam to escape before the pressure reaches one hundred and twenty pounds. This machine, for simplicity, safety and economy, is superior to all others, requiring less than half a pint of alcohol, or if gas is used, one fourth of a burner of ordinary size, to vulcanize.

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" Improved Flasks, each,	35
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J. H. McQUILLEN, D. D. S., Dental Literature and Art.
G. J. ZIEGLER, M. D., Medical and General Science, in their relations to Dentistry.

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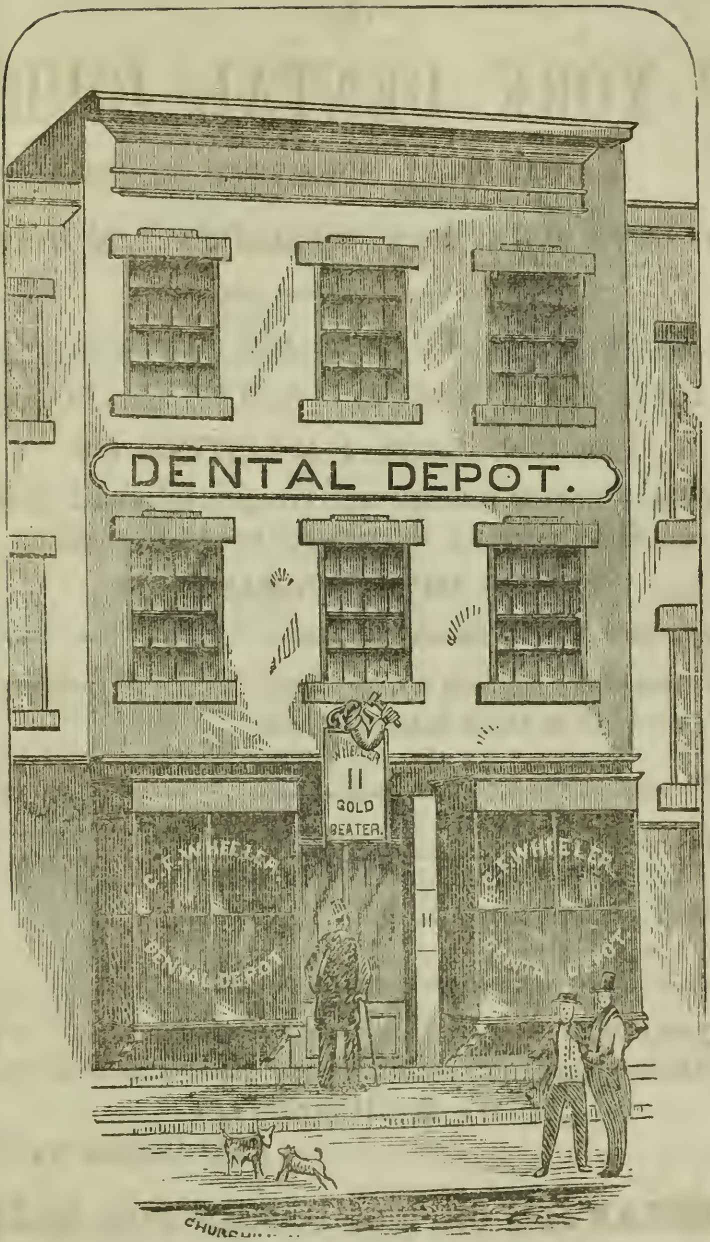

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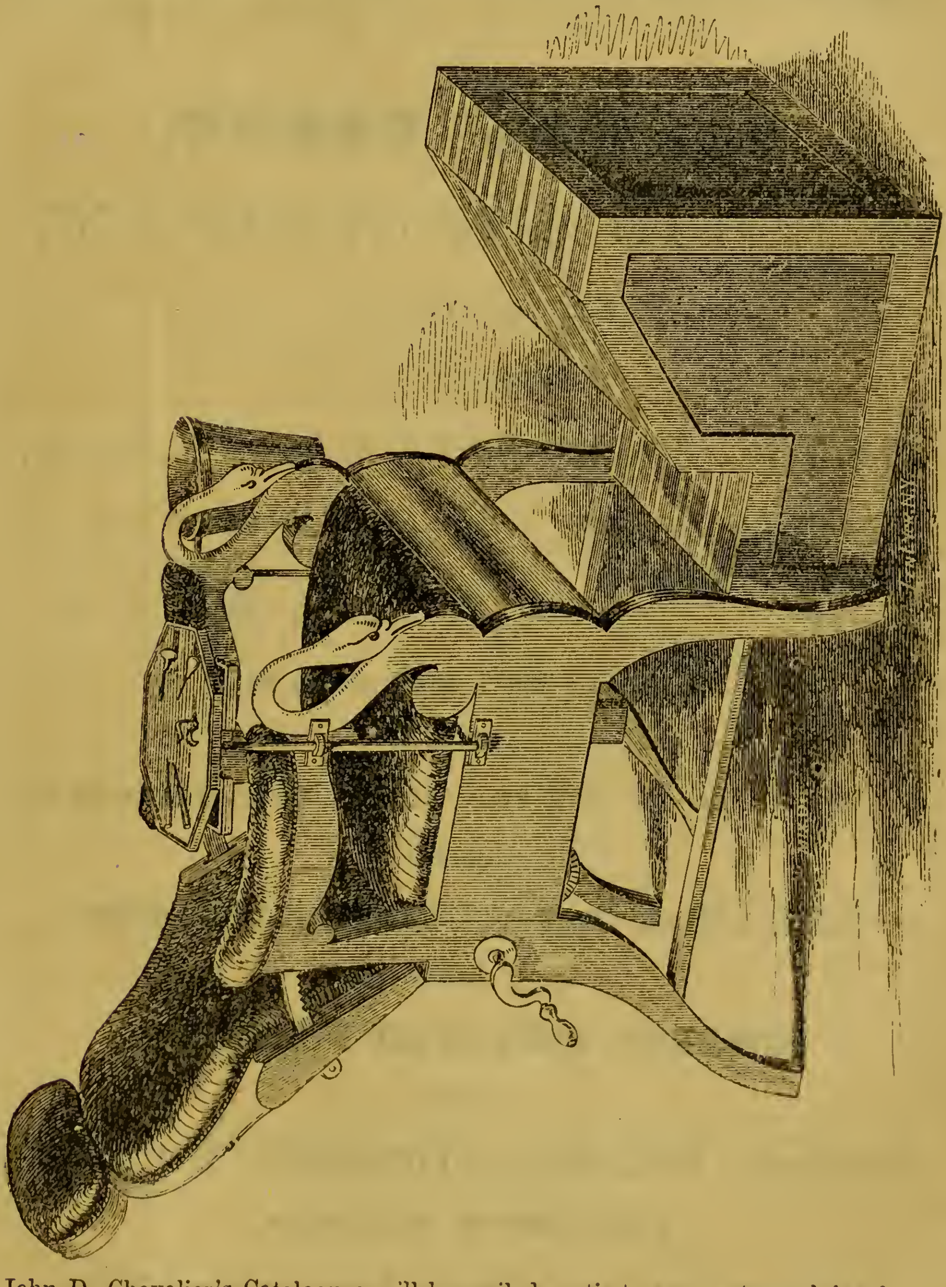

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JULY, 1861.

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THE

NEW YORK DENTAL JOURNAL.

JULY, 1861.

THE AMERICAN DENTAL CONVENTION.

Since our last issue, the great political question of our time has assumed a form which we could not have foreseen. War with all its calamities, its sundering of family and social ties, its heart-breaking, is upon us; but war, in this instance, with all its righteous motive, its worthy incentive, its glorious end. Every profession, and every community of men, must and will be sternly and seriously affected by this great change, and the dental profession no less than every other. We see ourselves, by the acts of the Southern States, and the defensive operations of the North culminating in non-intercourse, cut off from every association even of the pen with those whom we met but a year ago upon friendly and intimate terms, to con over together our various business and professional acts and their results.

Another year has rolled over us, and again the time approaches for our annual gathering. It is time for us to reflect upon this, and to conclude whether the events which have thus separated us from many members of our body, should be considered of a nature to entirely destroy the American Dental Convention. We are well aware that many parties have suggested the propriety of abandoning the approaching meeting, in consideration of the events to which we have alluded. We have considered the matter seriously and earnestly, and really, we cannot find in those events any excuse for what we must consider a dereliction from our professional duty. Is it in the moment of its weakness that we should desert the old organization, that has afforded us so much pleasure and added so largely to our professional knowledge? Because certain events force a portion of us to absent ourselves, does that excuse those who are not affected by them? Decidedly not; if ever the Convention required of its members their presence and hearty co-operation it is now; and we should not consider that we were performing our duty as journalists, if we did not endeavor, as far as possible, to urge every member of the American Dental Convention, who is not withheld by the political derangements of the period, to stand firm now, if he never has before, and charge himself as with an obligation, to come forward next month and labor to make this what we believe it can be made, one of our most interesting meetings. Especially, let the president and officers for the present year exert their influence to insure a full and enthusiastic meeting; let them not be affected by the suggestions of those perhaps disaffected ones, who would seize this opportunity to demoralize and, if possible, destroy our organization; but urge upon all to prepare to meet at New Haven, Conn., on the first Tuesday in August.

FIRST PRIZE ESSAY.

By Thomas Burgh, St. Louis, Mo.

In the following remarks a full upper set of plain or single gum teeth is taken as the standard, as the rules applied to that comprise those of all other kinds of this style of work. The case, after the teeth are adjusted, should be laid upon a piece of paper on the bench, teeth downward, and invested with a composition of one part plaster, one part asbestos, and one part moulding sand, mixed with water to such a consistency as will not allow it to disturb the teeth, nor flow away from the case when poured over it. This investment should be thick and strong, and there is not the slightest danger of its shrinking or cracking in soldering. After it has been allowed to set, the teeth should be removed from it, and teeth and plate thoroughly cleaned from wax. The pins of the tooth to be backed should now be straightened and then scratched on that part of the piece of backing required for the lining. The marks of the pins of course indicate the exact spots where the punch is to be used. After the holes are punched so as to freely admit the pins, a sharp instrument should be run around the edges of the tooth (the tooth upon the backing), giving the exact shape of the lining required. This should then be cut from the piece, being sure to allow surplus enough on the lower end to admit of its coming in contact with the plate when the tooth is adjusted to its place. Any shape that taste may desire can then be given to the lining, and it may be cut to cover any extent of the surface of the tooth that the judgment may deem necessary for stability and strength. But the strongest way, and the best, is to allow the lining to cover the entire surface of the tooth; and this square lining is equally as beautiful and symmetrical as any shape the most delicate taste could produce. The more the lining covers the entire surface of the tooth, the stronger the work will be, as the force of mastication is borne equally as much by the lining as by the tooth. But if it is desirable to save a few scraps of plate, of course this can be best accomplished by only allowing the lining to embrace the pins of the tooth; but if success is more to be desired than this, of course such a proceeding will be scrupulously avoided. After the lining has received the desired form, it should be fitted to the plate to which it is to be soldered. This should be done as perfectly as possible without leaving it too long so as to lift the tooth from its proper position. Better cut it a little short than endanger the position of the tooth by leaving it too long. This done, the lining should be fitted to the tooth as carefully as the inequalities of the backs of some teeth will allow. This step is very important, as the more thoroughly it is done the more perfect is the support the lining extends to the tooth, the more perfectly are secretions and food excluded from between. The lining should be fitted by bending it with the pliers to correspond to the unequal surface of the tooth, holding it up to the eye to see if the light strikes between. So uneven is the back surface of some teeth that it is found impossible to perfectly fit the lining to it. In this case, the *edges* of the lining should be made to come in perfect contact with the tooth, fitting at the same time the surface of the lining as much as possible. If the lining is not well fitted, the tooth is deprived of its best support; for in proportion as the lining stands away from the tooth, or fails to cover its surface, will the force of mastication have to be borne by the rivets, which no tooth will long sustain that has any service to perform. The next step is to secure the lining to the tooth. The pin-holes should first be countersunk upon the opposite side from the tooth, to receive the heads to be formed upon the pins (the countersinking is best done before the lining is cut from the piece); the tooth and lining then put together, and the rivets split or spread into the countersinking with a scraper, or some sharp instrument kept for the purpose—care being taken not to chip pieces off the pins in bungling attempts, but with a firm hand pushing the instrument down the centre of the pins, spreading them out into four parts; then a few light taps of a small hammer to tighten them, and the tooth and lining are secured together. This, as also the splitting, should be done upon a piece of soft lead, kept for the purpose, with a hollow cut upon the edge of it to receive the tooth. The hammer should only be used enough to keep the tooth and lining in secure contact; more than this is a positive detriment, as, aside from the danger of shattering the tooth, if the pins are riveted too tight, the tooth is liable to be cracked by the expansion of the lining in soldering. For, as the metal expands infinitely more than the tooth, which expansion nothing—much less the strength of the tooth's structure—can resist, if there was not some freedom of motion allowed the lining, by light riveting, the tooth would be very liable to crack. Now that the lining is united to the tooth, if it has been determined to allow it to cover the entire surface of the tooth, the edges should have been left in their rough condition as cut from the piece, and now dressed to the exact shape of the tooth with a file, giving them a bevel to correspond to the rounded edges of the tooth, being careful not to leave any offset for the accumulation of food. If it is a gum tooth, the dressing should only be carried down to the shoulder formed by the gum. Below this a slight surplus should be left on each side of the lining, for the purpose of fitting it to its neighbor, that they may all be connected in soldering. Of course, this part should not be bevelled, but the square edges allowed to come in as perfect contact as possible without leaving them too wide, so as to displace the teeth. (Of course, the connections should not be carried above the margin of the gum, as it would show between the teeth, and form a place for the deposit of food.) Now file off the surplus rivet heads, and the tooth is ready to be put in its place to be soldered. This done—being sure that the linings are not the least too wide or long—they should be secured by applying to their points the mixture used for the investment—with a little less plaster, saturated to run very thin with water, so that it shall flow well between the teeth, and adhere well to the body of the investment in soldering. Every exposed spot of the teeth should be covered with it, care being taken not to allow it to run over the rivets, or in any of the spaces where the solder is to flow. If the teeth have been badly ground, leaving much space between them and the plate, the linings should be left short enough to admit of filling the space with some material to exclude the food and secretions that will inevitably accumulate there if left open. Coarse filings of plate, saturated with borax, is the best thing for this purpose, as the solder will readily penetrate it. After the spaces are filled, the lining should be connected with the plate by a scrap of backing, as there is not sufficient stability to the filings to retain the flowing solder. Wherever the linings do not come in contact with each other, or with the plate, they should be connected with scraps of plate dipped in borax; and the rivets and connections—wherever it is necessary for the solder to flow—should be touched with borax. (The borax should be ground with water on a slate.) If the linings are united as above, the work will require but little solder; as the piece acquires by this means so much strength, as to render a surplus of solder unnecessary. The solder should now be laid on in small pieces covered with borax, (the borax will retain the pieces in place)—with a surplus to be absorbed by the packing under the teeth, if it has been found necessary to employ any—wherever the solder should flow, looking well to the rivets. The case is now ready for the fire. It should be heated slowly over a spirit lamp, gradually raising the heat, until it is as hot as the flame will make it. It should then be placed upon a piece of pumice stone, or a thoroughly dried mixture of plaster and asbestos, or a bed of burning charcoal, and submitted to the heat of a compound blowpipe, or gas—heating the investment first—until it is red hot. When the solder is on the point of flowing, the mouthpipe should be employed to concentrate the flame upon it; carefully at first, so as not to roll the solder in a ball, and cause it to tumble from its place. The soldering should now commence at the front part of the plate, in the centre of the range of teeth, and carried round on one side to the heel; the flame should then be directed to the centre again, and carried round the other side in the same manner, being careful not to allow the flame to rest on the plate any longer than is necessary to flow the solder well. If upon examination it is found that some places remain unsoldered—either from lack of solder, or by the displacement of the scraps of plate from the chinks—renew the scraps and solder as quickly as possible, without allowing the piece to cool down, and proceed as before, always observing the same precautions in regard to heating, and the manner of soldering, that were used in the first place. Care should be taken that the solder on the rivets should be thoroughly melted, that it may flow well around them. The soldering being finished, the job should be laid aside, covered with a piece of sheet iron to protect it from the air, and allowed to take its own time to cool. The investment should not be removed until the teeth are quite cold.

The plan of commencing the soldering in the centre is of vital importance. Although any one who has experimented upon it knows how much easier it is to commence at the heel; for the heel is the first place that receives the heat of the flame, and of course the solder is ready to flow here first; and when the soldering is once commenced and progresses round the arch, the necessary degree of heat is communicated before it. But let us see how disastrous will be the consequences of pursuing this easy plan.

It must be remembered that in heating the work, a large expansion takes place in the plate, whilst it is but comparatively trifling in the teeth. Then of course as the plate expands, the front teeth are carried forward the exact amount of the expansion. The heel of the plate expands behind the back teeth, leaving them in their position—affected only by the lateral expansion. Let us suppose then that while the work is in this condition, the soldering is commenced at the heel. Now, as the heel of the plate has expanded away from the back tooth without any corresponding movement on the part of the tooth, of course the union takes place whilst the tooth is forward of its natural position; as the soldering progresses forward, the heel of the plate commences to contract. But as the back tooth is now attached to it, it must be carried forward with it, pushing the front teeth from the arch—and these teeth are soldered to the plate at the very moment they are thus out of position. Now, the front part of the plate has to contract; of course the side yet to be soldered presents no obstacle, the teeth and plate being yet free. But as the plate moves backward on the other side, the back teeth, being secured to it, prevent the front teeth from moving back with it—thus leaving them still farther from the arch, endangering the teeth by the pressure of the contracting plate, and inevitably springing it more or less. This is more clearly demonstrated in soldering a set of blocks, because of their continuity; being divided into but three or four pieces, there is less chance of their being crowded together by the contracting plate, than in a set of teeth divided into fourteen pieces.

For this reason it will be found utterly impossible to solder a set of blocks, by commencing at the heel, without throwing the front blocks an eighth of an inch, more or less, from the arch.

But let us commence the soldering in the centre. As the plate contracts after the front teeth are secured to it—the back teeth being still loose—the front teeth are brought back with it to their former position before the expansion took place; and by the time the back teeth are being soldered, the front teeth are properly and immovably fixed. Of course, after the soldering is all finished, there is yet some contraction to take place. But it is so slight the teeth will generally crowd together enough to admit of it. At any rate it can be provided for by inserting a thickness of tissue paper between a few of the teeth. To the above manner of lining and soldering a set of teeth, I can remember of but two objections that can be urged, viz.: the taking the teeth out of the investment to back them; and uniting the backs with solder. To the first, I will only say, that I consider it bad practice to line a set of teeth in the investment; and I will leave it to the reader, if the various manipulations that I have described for the process can be as thoroughly done in the investment as out. If he can do so I have nothing to say; I cannot. The other is contained in the charge that the union of the linings causes the plate to warp. I acknowledge that it does do so to a certain extent; it is inevitable, because the spaces between the linings that were empty before the case was soldered, are now filled with solder, whilst the plate is at its greatest expansion, thus preventing the plate from contracting to its former position, and thus the consequent warping. So the springing of the plate will be in exact proportion to the breadth of the spaces to be soldered. But we will endeavour to see if this warping is a real objection; so much so as to compel us to abandon the practice of uniting the linings. If we know that the springing is inevitable, we also know in what manner it will take place, what is its kind, and what the degree. We know that it never takes place inward, or causing the plate to rock in the mouth, and its edges to leave the alveolar ridge. If it did, it would be a serious objection. But that it takes place toward the palatal surface of the plate, contracting the alveolar arch, and causing the edges to embrace the gums tighter, thus excluding the air more perfectly, and giving an increased suction to the plate. If this is so, this warping—always slight, uniform and reliable—is, instead of being an objection, positively desirable. And that it is so experience will demonstrate. Thus is this objection disposed of; but if any one still insists upon entertaining it, he is at liberty to allow his linings to remain disunited; and endeavor to supply the strength that is lost by the thickness of the lining. But he cannot supply the beauty of the continuous lining, nor the greater part of its strength. But if he does his soldering in the manner proposed, and does not crowd his teeth too tight together, he can be rewarded by his plate not springing the breadth of a hair.

A few words in regard to the manner of lining blocks. The same remarks on the necessity of not riveting teeth too tight, apply with tenfold force to block work. The holes of the lining should be punched so large, that there will not be the least binding on the pins. And instead of splitting and hammering the rivets to secure the lining, this should be done by placing the block and lining between the jaws of the punch—having a pad between the punch and block—and gently mashing the rivets down with the punch; just sufficient to hold the block and lining in secure contact. If the rivets are tight, the block will be *sure* to crack. The same directions in regard to soldering and uniting the backs apply to block work.

SECOND PRIZE ESSAY.

LINING AND SOLDERING TEETH.

By George Beers, Montreal, C. E.

Before speaking of *lining* the teeth, it may be advisable to offer a few remarks on the preparation of the set for that manipulation. The *plaster* used is of great importance in preventing the warping of the plate, and every precaution that can be taken to defeat this should be resorted to. Four ounces of fine washed sand to half an ounce of plaster, are the best proportions when sand is used. But a mixture better than this is made by grinding up the asbestos and plaster casts that have been used in porcelain baking with an equal part of plaster, and employing this as a substitute for sand. If thought advisable, however, a little sand may be added to this. One great objection to sand is, that if it is not thoroughly washed before used, and well mixed with the plaster, particles of it are liable to unite with the glass of the teeth in soldering and stick to them. If obliged to use sand in combination with plaster, I invariably varnish the teeth with a weak solution of gum sandrac dissolved in alcohol, previous to putting the set in it. This prevents the glass in the sand sticking to the teeth. Asbestos, an unshrinkable substance, prevents plaster from cracking, and drawing or displacing any of the teeth. An *excess of plaster* is to be avoided. As a further means of preventing warping of the plate, I bend a piece of copper wire of gauge to fit around the inside or alveolar ridge of the plate, then place around it an iron ring or cup, pierced with holes to allow of escape of moisture from the plaster, and pour some plaster on the set and place the copper wire on the ridge, then pour plenty of plaster on the whole set, taking care not to disturb it till dry, when it is ready for

LINING.

The metal used for linings should be a little stiffer than that for plate, but this is not absolutely necessary; one part of platina to every nine of gold (twenty-two carat) makes a very good lining. Before commencing to back the teeth their pivots should be straightened, and all wax, etc., cleaned away from the teeth and the plate where the linings are to touch.

When lining, be careful that no pieces of plaster, etc., get in the places of the teeth, as anything like this would alter the position of the teeth and likely spoil the set. A little rouge and oil is first applied to the pivots, doing all the teeth at once. A strip of gold of the required width is then fitted to the surface of the plate below the tooth, and when accurately fitted there is pressed against the pivots of the tooth, keeping the lining down to the plate. The marks of the pivots are then punched from the side marked, the holes are rimmed, and the lining cut to the proper length and filed to any shape desired. Generally they are filed round on the top, sometimes square; the former looks the neatest. The lining should be very nearly the entire width of the tooth, and brought up a little from the edge of the top. If a tooth is very thin at its end or crown, it is not advisable to bring the lining up much above the upper pivot, as it shows through, and darkens or changes the shade of the tooth. When the lining is fitted to the plate, a shoulder or projecting point should be left for each tooth to connect with the adjoining lining, so as to form a continuous band around the bottoms of the lining, which adds additional strength to the work.

If *gum teeth* are used, we may suppose a *band* or *rim* is put around the plate. To give a band all around the teeth and linings, connect it with the linings made in this style, and solder. These shoulders should be all of a uniform height, so as to make the piece look better. A rim to receive the gums of the gum teeth necessarily takes a great deal of the force in mastication off the pivots, thus strengthening the entire structure. If any difficulty is found in fitting a lining to a tooth with a hollow back, do not bend the lining—as this seldom can be well done—but borax it well and press a little platina sponge or gold foil in the space between the teeth and lining, and flow some solder in it. The pivots of all the teeth and back of the linings should be well boraxed, so as to make the solder take a good hold. Often the lining might be drawn or easily knocked off without injuring the tooth, when this precaution is neglected. I prefer *cutting* the rivets with an engraver, to riveting them with a hammer. It is not always prudent to bring the lining down close to the plate, for you may think it fits right and of the proper length, when it is too long, and a good deal might be filed off. I leave a slight space between the lining and plate, so as to be sure the lining is not too long, and after putting plaster around the teeth to keep them in their place while soldering, I fit a piece of gold in it, or press in a little platina sponge or foil. Wherever there are spaces requiring filling up, I press the sponge in them and flow solder through it. If these spaces have not been filled up, and the set is finished, put some gold foil in them, or, what is perhaps better, some of the osteoplastic or bone-filling. This prevents things accumulating in these spaces, and causing a foul smell. Teeth might be made to save all the time and trouble of lining by uniting the lining with the teeth during their manufacture, leaving the platina plate the width of the tooth projecting, to be bent to any shape required by the operator.

SOLDERING.

The perfection of finish that can be given to a set of teeth depends greatly on the manner in which they are soldered. A badly soldered set can never be well finished; and no matter how well the plate fits and the teeth articulate, if the set is not well finished off, the patient imagines it is only half done, and does not "pay up" so willingly as if it had been finished or polished to suit him,—to bear inspection *out* *of the mouth.* The art of soldering a set evenly and well, can only be attained by care and practice.

The surface of the metal to be soldered must be free from dirt, etc. The solder used should flow evenly and easily, and harden quickly. Great care is necessary in the manufacture of the solder, lest it be melted too long, and the alloys added to the gold oxydize and escape and lose in quantity. The safest way of acting is to melt the gold first, then stir in the alloys with a piece of stick. The receipts of Harris for solder are very good, but we prefer the following, as it flows easier and is just as good. To every one pwt. of gold (twenty-carats) add seven grains of the alloy of equal parts of copper, silver and zinc. This alloy is made by first melting the copper and silver, then stirring the zinc in and quickly pouring into an ingot. The zinc used should be *sheet*, and the mould should be thin, as this alloy is very hard to cut up when it is thick. The secretions of the mouth do not act on this solder, and a very fine finish may be easily given to it. The solder should be cut in small pieces of different sizes. Small *balls* of solder are often very convenient and should be kept. To prevent the solder running down on the plate during the process of soldering, cover the entire palatial surface with plaster as far up as where the solder is to unite the linings to the plate. *Too much borax* should not be put on as it forms a glass which, interposing between surfaces, excludes the solder, and often deceives the operator. Sometimes, in spite of every precaution, you cannot get the solder to unite two surfaces; in this predicament a little platina sponge should be pressed on the spot desired to be soldered, and the solder flowed over this, when it will readily unite. The solder should now be put on and the set placed in an oven to heat gradually. While it is warming get every thing ready, see that the wick of the lamp fills the spout, lest the flame gets down to the fluid, beware of moisture in your mouth blow-pipe (if you use one), have your self-acting blow-pipe ready, then take the set from the oven and place it in a furnace with hot coals and carefully heat it up till it is almost red hot; have your blow-pipe going, and immediately transfer the set to your sheet-iron cup, or holder, filled with hot coals, then proceed to heat it up a little more with your self-acting blow-pipe, to bring it all to a uniform heat, and then use your mouth blow-pipe to flow the solder, breathing through your nostrils and respiring through your mouth alternately, and keeping up a continual and steady flame. A sharp-tongued flame is the best, when the set is well heated, to flow the solder; though it should be large at first and gradually reduced to a smaller focus. Solder one tooth at a time, and do them all before the piece becomes cool. When the set is completely soldered, leave it on the hot coals and let it take its own time to cool. Heat sometimes causes the solder to flow in a wrong direction; when it does, apply heat to bring it back again where you desire, or put a small piece of solder between the solder and the spot it should have gone to, and melt it, keeping the flame on the part you want it to flow to.

Instead of soldering the linings and plate at the same time, you might solder the teeth separately, by imbedding each one in a little button of plaster and covering all but the linings, then heating up and soldering. The teeth are now taken out and finished off. After this is done, put them in their places in the plaster to which they were backed, and cover them half way down the linings, leaving enough space to unite them to the plaster. You then solder as usual. A beautiful set can be made in this manner, as each lining is finished from the plate, and is not injured by the future soldering. The solder used to unite the linings to the plate should flow more easily than that used for the linings. A very strong set may be made by lining the teeth with thin platina and soldering them apart from the plate with *gold plate*, then soldering them to the plate with common gold solder. To hasten the evaporating of the water in the plaster, leave it in the oven when not working at it. The value of platina sponge to the mechanical dentist cannot be appreciated till tried, and lest some one of your many readers are ignorant of the manner of its preparation I give it here.

Dissolve platina in nitro muriatic acid (No. 5, 1 part, Ch'l, 2 parts,) add to this, ammonia or common sal ammoniac, which produces a precipitate of a yellowish color. Expose this precipitate to a red heat in a crucible; the acids and ammonia are driven off, and platina sponge remains. Another method, is to throw the yellow precipitate on filtering paper, and to dry it, and when the liquor has passed through, put it with the adhering precipitate into the crucible.

For "The New York Dental Journal."

LANCING GUMS.

By Abr. Robertson, D. D. S., M. D., Wheeling, Va.

As I intimated in the last number of the journal, I propose to offer a few observations on lancing the gums preparatory to extracting teeth.

This, in some cases, is an important preliminary operation; and when required, should be done well and thoroughly.

The cases which require the operation are the roots of such teeth as are decayed, or broken off so far below the gum and the edge of the alveolus that they cannot be seized or apprehended by the forceps, or other instrument to be used for their removal without cutting, or otherwise injuring the gums; or such roots of teeth, as from inflammation, or otherwise, have the surrounding gums more or less closed over them, rendering it difficult to apply any instrument, without first removing the gum, or at least, not without inflicting a great deal more pain with the extracting instrument than with the knife.

The manner, and the amount of cutting will, of course, depend on the circumstances of the case. If it be a firm root, broken off so low that, to remove it, it is necessary to remove a portion of the alveolus, the gum should be dissected, by one or two strokes of the knife, from the alveolus, as deep as the forceps are to be applied and as wide as is necessary to facilitate their application; another cut should also be made, by a single stroke of the knife, in the direction of the length of the root, forming two small flaps of the dissected gum. The same operation should be performed on both the outer and the inner sides of the root, if the forceps are to be used; but if the case is one where the elevator is best adapted, it will only be necessary to make the cuts on the outside.

In performing the operation, any of the curious, and even complicated lancets, on which so much exuberant ingenuity and skill have been expended, can, perhaps, with great care, be made to answer the purpose, as well, or nearly as well, as a simpler and more convenient one; and a plain bistoury, or a scalpel, or a common penknife will answer just as well. Although, as I have said, this operation is sometimes necessary, and in some cases quite important, yet, as a general rule, it ought to be entirely omitted; and for various reasons. The first of which is, that, in all ordinary cases—and the exceptions are *very* rare—that is to say, in all cases of entire teeth, and most roots of teeth, it is entirely useless.

The resistance to be overcome in the extraction of most teeth being offered mostly, by the strength of the firm, dense membrane which unites their roots to their alveoli, it is, therefore, very evident that simply severing the gum from the neck of the tooth, to which usually it is but slightly attached, and all of it that can be reached by any ordinary gum lancet of but small extent, can have but little influence in lessening the amount of force required to extract them. A knife, or gum lancet of any kind, cannot, by any possibility, be carried far enough between a tooth and its alveolar process to sever but a very small portion of the periosteum, and it is very seldom that any one ever attempts to cut this membrane below the edge of the alveolus, unless it may be in the case of some loosened root, which he intends to remove entirely with his knife.

The next great source of resistance, in this operation, and sometimes not unfrequently the source of greatest resistance, is the divergence or the convergence of their roots, or the divergence of them for a portion of their length, and their convergence the balance; requiring, if one or more of the roots do not first break, the removal of the bony septum between their roots, or the yielding of the parieties of the alveolar cells, or the springing of one or more of the roots to admit of their removal, even if the periosteum were all scraped or macerated away.

Corrugations of the roots, or crooks in them, exert a similar influence, which no knife or lancet, of however ingenious form, can overcome.

As already remarked, the attachment of the gum to the neck of a tooth is always but slight, and the extent inconsiderable; so slight and so inconsiderable, that no operator or patient could possibly appreciate the difference in the amount of force required, or the pain experienced in the operation, whether the gums were cut or not.

And besides all this, the lancet is rendered entirely unnecessary in almost all cases, by the fact that properly constructed forceps—forceps thoroughly fitted to each class of teeth to which they are to be applied—will quite as thoroughly remove the gum from the neck of the tooth, and by the same movement that applies them, as any lancet can be made to do it, and with no more pain in the application—with even less pain in the application—than if the gums had been ever so freely lanced.

The operation of lancing the gums preliminary to extracting a tooth, is, in most cases, not only unnecessary, but decidedly objectionable, for many reasons. It produces a great deal of unnecessary pain.

With many patients the dread of having the gums lanced is greater than that of having the tooth extracted. Many timid and nervous patients can, by great effort, bring themselves to bear the infliction of one pain, but cannot a second. So, it is no uncommon thing for such an one to submit to having the gums lanced, and then to go away without having the tooth extracted; but who would gladly have had it out if it could have been done at once, *as it should have been.*

There is also some more danger from excessive hemorrhage when the gums are lanced, than when they are not. A smoothly cut surface is more liable to bleed badly than a lacerated wound. Therefore, especially in all cases when it is necessary to extract a tooth, and a *hemorrhagic diathesis* is known to exist, or is mistrusted, the use of the lancet should be most sedulously avoided.

I once knew a child to bleed to death in the hands of a very able surgeon, from simply cutting the child's gums to facilitate the eruption of its upper deciduous central incisors, though all known means were resorted to to arrest the bleeding, from simple and long continued pressure through all the range of styptics and astringents—from cold water to the actual cautery.

The only arguments known to me in favor of the general use of the lancet, is, that by the adhesion of the gums to the neck of the tooth sometimes the gum may be lacerated before that adhesion yields. If this were the usual result of neglecting to use the lancet, or if it were even a frequent occurrence in consequence of such neglect, there would be force in the argument. But as that accident, in my experience and observation, does not occur more than once in several thousands of operations, and even then is usually the result of other carelessness, the good rule not being observed of operating no faster than the eye can follow, or than the hand can be stayed at any stage of the operation; and as the forceps, as already demonstrated, generally accomplish the object more effectually, without loss of time to the operator, with less pain and without the interval of terrible suspense to the patient; therefore, on the principle of "the greatest good to the greatest number," I cannot think it justifiable to torture the great multitude in order to save an individual, or even a few persons from the possibly slight infliction of pain that might thereby have been avoided.

Have a gum lancet, then; let it be a good, plain, practicable instrument, but use it seldom.

NEURALGIA OF THE HEAD.

By T. C. Miller, M.D.

Headache is one of the most common forms of Neuralgia. It is produced by a diversity of causes, and these causes produce a diversity of symptoms, so that different *varieties* of the disease are distinctly recognizable. Headache may be spoken of as if it were a disease or the symptom of a disease of the parts where the pain is felt; but it is quite often the symptom of some disease of the system quite remote and anatomically but slightly connected with the head, and hence it is that the different groups or varieties of this disease, even where the symptoms are quite analogous, are in reality distinct in their origin, and also in the manner in which the suffering is to be subdued.

The first group, or variety, includes those headaches that are produced by the sympathetic connection, as it has been styled, which the brain holds with the other parts of the system and the diseases of different localities, and hence are styled *Sympathetic.* This form of headache attends most diseases that are accompanied with much febrile excitement, and depends upon irritation or congestion or inflammation of some structure, tissue, or organs, as in typhus and enteric fevers. It is also caused by functional or organic diseases of the stomach and liver.

The second group, or variety, of headaches, may be styled the *Idiopathic* variety, caused by a peculiar erethism of the brain, either extending to the whole of its substance or confined to the front part of it, (*neuralgia frontalis,*) or to the back part of it, (*neuralgia plexus cerviculis,*) or confined to the aponses, or the bony walls of the head. The two last forms of headache are usually produced by rheumatic, gouty, or syphilitic diseases, and the former depend upon some disease of the soft substance of the brain or its immediate envelope. The pain may be confined solely to the covering of the brain, (*dolores cerebri,*) or may be limited to one half of the head, (*hemicrania,*) or even confined to a small spot not larger than the end of the finger, or even the point of a nail, (*clavus.*) The majority of patients who are habitually subject to idiopathic headache usually feel the pain in some particular point or spot. This form of cephalic pain may be produced by derangement of the nerve substance, (*cephalœa nervosa,*) or by congestion in the blood vessels, (*c. sanguinia,*) or from metastasis from some other part of the system, (*c. metastica.*)

Hemicranic neuralgic pain in the head comes on sharp and quick, is lancinating, in paroxysms, which are frequently repeated. There is a sense of horripilation, with other symptoms of hysteria or of hypochondriasis. It frequently follows after dyspepsia or other derangements of digestion. The *Causes* of this form of headache, may be either direct or indirect. Irritability of the nervous system, produced by prolonged impressions upon the nerves of some special sense, as by continuous exposure to intense light, or to loud and repeated noises, severe and continuous thought, violent passion or deep emotions, the depressing influence of direct solar heat, the heat and vitiated air of a crowded room, loss of sleep, the motion of a ship or swing, great loss of blood, dissipation, and great hunger, will produce this form of headache. It sometimes appears to be hereditary.

Headache, even when severe and long continued, does not appear to endanger or to shorten life; but it is frequently very persistent and not readily curable by any course of medication. During the period of suffering it is best for the patient to be confined to bed, and perfect quiet with stillness and darkness should be enjoined, as these are excellent palliatives.

When *Hemicrania* is the result of hysteria or hypochondriasis, hyosciamus, gelseminum, Hoffman's anodyne, sinapism to the feet, and hot foot-baths will do much to remove the paroxysm. Afterwards, quassia, hydrastis Canadensis, and some preparation of iron, will often complete the cure.

In *Nervous* headache, gelseminum is one of the best agents known. The daily use of two or three grains of the sulphate of quinia, for five or six months, is often needed. In cases that demand iron it should be combined with about the same amount of the Prussiate of that metal. Iron, alone, in some forms of neuralgia of the head, is exceedingly useful. The ferrocyanuret of iron has been highly lauded in this disease for a long time.

When the digestive functions are much disturbed, the sulphate of quinia frequently increases the difficulty, and then the muriate of quinia,—or, better still, the sulphate of cinchonia should take it place. I frequently order the *sulphate* of iron, in place of the Prussiate, and give a grain of it in combination with two grains of either the sulphate of quinia or the sulphate of cinchonia each morning and evening.

Sometimes I find it necessary to give the extract of nux vomica to the extent of half a grain at a dose, along with the iron and the salt of the bark.

Crude coffee was used by Formay, in headache—prepared by taking half an ounce of the unburned coffee, pulverized, and pouring upon it four ounces of boiling water in a closed vessel, and let it infuse over night. In the morning this was taken at one dose. The alcoholic extract of coffee, in one grain doses, to be repeated once in two or three hours, has proved beneficial.

Caffeine has been highly extolled, but it is expensive and frequently cannot be obtained. A hydro-alcoholic extract, made by taking good Java coffee, and steeping it in dilute alcohol, appears to answer quite as well.

In Rheumatic and Gouty neuralgic headache, the wine of colchicum, the tinctures of guaiacum, of aconite, and of cimicifuga, are of great value. The original taint of the system must be removed ere the pain in the head can be permanently cured.

Where the system has been tainted with syphilis, iodide of potassium, chloride of gold and soda, conium maculatum, and other *Anti-syphilitics* may be demanded, to be followed by such agents as are required to restore the general system to health. Hops and lupuline have proved of signal service in these cases to allay pain and procure sleep.

In headache produced by derangement of the liver, chlorine water, iron and nux vomica in small doses, and the tincture of blood-root, has answered very well indeed. If there is much anæmia the iron in small doses should be continued for some time. If the anæmic condition is persistent, the sulphate of manganese should be given for a few days until it rouses the liver to perceptible activity. In all cases of anæmia with inactivity of the liver, whether accompanied with headache or not, the bitter tonics should be given daily for a considerable space of time after convalescence has become established.

Whatever form headache may have been present in, it is indispensably necessary to continue the appropriate medicine for some time after the pain has been subdued, but in diminished doses, and to take gentle exercise in the fresh air, to make use of baths or other means to keep the skin in active health ; and to regulate the manner of living, exercise, diet, etc., so as to lead all parts of the system to perform their functions with activity and ease. Even slight deviations of diet or exercise, or exposure will be quite likely to bring on a relapse. Sometimes care and judgment in regard to diet and hygenic measures will cure headache without medicines.

The fact that there is a variety of headaches that are peculiar to females, and therefore must in some way be connected with the sexual organs, does not appear to have impressed itself as strongly on the minds of the profession, as its importance deserves. One variety is observed only after the female has arrived to the period of puberty, and continues to present itself only until the final cessation of menstruation. By Dr. Graves it is called *hysterical congestion* of the brain, but in many cases the condition of congestion does not obtain within the cranium, and the seat of the pain is within the nerves of the *scalp*, and not in any way connected with the brain. A very general examination will show that the pain is entirely external to the skull, and the integuments may be considerably swollen as well as tender. It is connected with spinal irritation, extending to the extremities of the occipital nerve. Many forms of neuralgia, as irritable mammæ, pleurodynia, neuralgic face-ache, tooth-ache, ear-ache, and other local neuralgic pains, have their origin in spinal irritation.

Many cases of spinal irritation, with neuralgic pain about the head and elsewhere, are produced by acute, or sub-acute inflammation of the ovaries, or by an irritable condition of those organs, or of the uterus; and the originating disease, or the primary disease of these central organs must be subdued before the cephalic pain can be conquered. That a headache belongs to this variety can usually be determined by the fact that only unimpregnated females during the child-bearing period are subject to it, and that it is almost always aggravated just previous to the appearance of the menses. It appears far more frequently on the left side of the head and seldom extends to the right side.

Inasmuch as the brain is the centre of the nerves of sensation, pain in and about the head is the most common symptom of disturbance of the functions of those organs in the female whose special function is that of reproduction. Pain in the forehead, over one temple, in an eyeball, in the scalp, the ear, the face, a tooth, even so severe as almost to produce temporary mental derangement or a kind of nervous delirium and phrensy, may sometimes be observed as the result of excitation in the female reproductive organs. These pains may last for but a few hours, or they may continue a day or two; but while they do continue, they are greatly aggravated by even ordinary impressions made upon the nerves of the special senses; and they frequently disappear along with an apparently critical secretion from the kidneys of an immense quantity of colorless and odorless urine.

This headache is chronic, intermitting, usually of a shooting or lancinating character, the pain darting from the base of the brain or the neck to the temples, and does not attack the teeth. Often, pain in or under the left breast, and pleurodinia, exist at the same time. If there is spinal distortion, this form of headache is quite a common accompaniment.

In the treatment of this form of headache, special attention must be paid to the originating disease of the uterus or ovaries. When these organs are restored to health, the pain in the head will cease. Zinc, iron, beeberina, aconite, nux vomica, aloes, nichel, ammonia, valerian, and many other medicines have been found of use, and those should be selected which seem best adapted to the particular case.

Headache, of an origin the same as that just described, if accompanied with nausea, or the vomiting of acid or bilious matter from the stomach, or of undigested food, is frequently called *sick-headache* and *bilious headache.* Sometimes *sick-headache* is produced by derangement of the stomach or liver, and that form attacks males as well as females. But when it is attended with great nervous irritability and a feeling of fulness and tension in the head, by pulsations about the temples, and by an idea that the bones about the cranium are movable, it is almost invariably a symptom of irritability of the reproductive organs. In those forms of sick-headache which originate from derangement of the stomach and liver, the *Alkalies*, and particularly the salts of ammonia, are very serviceable. In the other form of sick-headache, the *Uragentics* are of more value, but both these orders of medicine may often be given in all forms of sick-headache with advantage.

When the pain in the head can be clearly traced to a rheumatic diathesis and exposure—when it is aggravated by the horizontal position, and affects the whole of the head, it may be well to make a trial of guaiacum, the iodide of potassium, the tincture of prickly-ash bark, quinia, and any of the remedies for rheumatism. If, in addition to rheumatism, the system is also tainted with syphilis or gonorrhœa, that taint will demand special treatment also. Many cases of rheumatic headache cannot be permanently cured until the syphilitic or gonorrhœal poison is also expelled.

Many of the most severe cases of pain in the head are the result of some derangement of the chylopoietic viscera, or of some of the organs of nutrition. If the food is not perfectly prepared before it enters the blood, or if the blood is not properly acted upon by the nutritive or depurating organs, it must produce more or less derangement of the soft structures of the brain through which the not perfectly natural fluid flows. Hence, the terms *Bilious* headache, *Gastric* headache, and many others are often correct, as indicating the origin of the suffering.

The organ or function that is deranged must be righted ere these cases of headache can be cured; and, although sedatives applied locally or given to the general system, may give momentary relief, they can never perfect a cure. Headaches having their origin in the derangement of the fluids of the system are much more common with those who have passed middle age than with the young. Those who lead a sedentary life, with, perhaps, late dinners and large social evening parties, are quite liable to these forms of headache.

A course of spare diet, with the cautious use of evacuants, and plenty of rest in bed, and gentle out-of-doors exercise during the day, will almost certainly produce a complete cure in these cases.

With women who have passed their fiftieth year, having a sallow and dry complexion and subject to a hemorrhagic discharge from the bowels or occasional hemorrhoidal swellings produced by an obstruction in the portal circulation, inducing an irritability of temper quite characteristic—there is quite apt to be headache of a sudden violence and accompanied with vertigo. There are apparent spots floating before the eyes, (*muscæ volitantes*,) or queer and strange figures, or a sudden but momentary blindness, which causes great anxiety with a fear of loss of sight.

These patients are not benefited by active purgatives, although such are often recommended and seem to be indicated by the accompanying torpor of the bowels. Warming laxatives, with rather a nourishing diet and plenty of friction on the surface, with a little sulphur and magnesia, and perhaps a little rhubarb added for a daily morning dose to overcome any torpor of the bowels and allow free circulation of the blood through the liver, may be all that will be needed; or, it may be well to give at each night one or two pills of the extract of dandelion and a little pulverized capsicum.

There are several other diseases that produce pain in the head. Frequently strong mental emotion exists along with derangement of the functions or organs of digestion. Many who perform an unusual amount of mental labor at the same time make use of an unusual amount of coffee, of tobacco, of the alcoholic preparations, or of some form of opium, and the digestive functions are disturbed while the brain is placed under unusual impressions at the same time that it is called upon to perform an inordinate amount of labor. These combined causes produce pain in the head of a complicated nature that no one course of medicine will suffice to completely cure.

When pain in the head comes on only some hours after a meal, when the food has had time to undergo gastric digestion, but is, some of it, still lodged in the duodenum, and is always more severe after a meal that contains fat meat or oily substances—the natural inference is that there is derangement of the pancreas or of the duodenum that produces what may be styled duodenal dyspepsia, of which the headache is a sympathetic symptom. This form of dyspepsia often produces a sense of tightness and distension of the scalp on the front part of the head, and stiffness or partial immobility of the eyeballs, with perhaps obscure or misty vision, or an appearance of luminosity or of various colored appearances in the eye before the advent of the pain in the head.

Headache from duodenal derangement, which is sometimes mistaken for that resulting from gastric derangement, does not pass away after vomiting without or with the use of an emetic. The act of vomiting does not reveal that there has been anything in the stomach which has produced irritation of that viscus, and the mechanical movements caused by vomiting are almost sure to aggravate the distress. But a purgative dose of magnesia and rhubarb, by clearing out the upper part of the intestine and carrying forward the imperfectly digested food that may be lodged there, will give relief not only to the pain in the head, but also to the distress, pain, and sense of fulness below and behind the stomach which distinguishes this form of dyspepsia from that which is located in the stomach.

Acids, as of an orange or lemon, taken an hour before breakfast, and, if need be, before other meals, are specially useful in dyspepsia of both the stomach and duodenum, where the indigestion is the result of debility or inactivity of those organs. If such dyspepsia has been caused by inordinate mental effort, or from the depressing passions, as grief, disappointment, etc.; these acids taken before eating will often prevent all unpleasant symptoms, the pain in the head as well as others. If the food remains undigested long enough to undergo fermentation, alkalies may be demanded in combination with rhubarb after meals, even where acids are the most useful before eating.

It is in duodenal dyspepsia that the various *dinner pills*, as Lady Webster's and others, which contain a little aloes and some of the aromatics combined with an alkali, have been found to give the most relief. The aromatic prevents rapid decomposition of the food, the alkali favors saponification, solution, and absorption of the fatty portion of the meal, and counteracts acidity, while the aperient stimulates the propulsory movements of the walls of the intestines to carry the undigested substances into the lower part of the alimentary canal, and perhaps the aloes increases the flow of bile.

Both sexes are somewhat liable to *hemorrhoidal* headache, but women that have reared a large family of children are far more liable to it than males. When it does appear in males, it should be treated on the same general principles as the plan just detailed.

Headache connected with derangement of the sexual organs, is very frequently met with in persons of both sexes at about the age of puberty. With males, this headache is often the result of hyperæmia; but with females, it is more frequently accompanied with anæmia and with amenorrhea, and even with chlorosis.

Whatever derangements may be observed affecting the general system or any particular locality or organ, must be corrected; and then but little attention need be given directly to the head.

Whenever headache has been caused by anxiety, affliction, dissipation, despondency, disappointment, mental fatigue, grief, or any other source of mental exhaustion, accompanied with considerable depression of the vital powers, especially with those who have led an active life, and have passed middle age, there will be vertigo, severe *twitchings* of pain, giddiness, dimness of vision, black spots floating over the field of vision, inability for bodily or mental exertion, moroseness, and extreme mental irritability.

These cases frequently find their way to the insane asylums, and are very difficult of cure. Stramonium, hyosciamus, aconite, and lupuline, are strongly indicated in such cases. The utmost care must be taken to protect the patient from any and all external and internal sources of suffering or of distress of any kind. The bodily functions should be performed without embarrassment or irregularity, and all sources of mental agitation as much as possible shut off from the patient. Then with proper diet and regimen, and the use of some of the agents here named, and especially with aconite in small but often repeated doses, the disease may be subdued, often in a very short space of time.

An important fact connected with headache which is not always borne in mind by practitioners, is, that cephalic pains that were originally *sympathetic* only, of derangement in some part of the system quite distant from the head frequently, when long continued finally produce an actual disease in the cranium that may perpetuate pain after all traces of the original disease have been eradicated. Headaches that were caused by disorder or derangement of the digestive organs may remain for months or years after the organs of digestion are fully restored to health.

While it is indispensable that the physician shall, as far as possible, determine the exciting cause or causes of the pain in the head in all cases that come under his management, and shall endeavor to remove such cause or causes, it should not be forgotten that there are cases of very extreme and persistent pain in the head which appear to baffle the most acute and scientific skill in regard to discovering the nature of their cause, as well as the proper means for their relief. These distressing pains in the head *may* be connected with disease of the nerve substance, or with disease or derangement of some organ that is connected with the brain by sympathy or otherwise, but frequently there is no such connection.

There are various kinds of pain in and about the head that are not properly included in the *Neuralgias*, as they do not, either directly or by sympathy appear to be the result of disease or derangement of the nerve structure. Most of the *organic* headaches are of this class. When tumors in the cranium, hydatids in the brain, inflammation of the mucous lining of the frontal sinus, congestion of the brain, the suppression of accustomed evacuations, as of the urine, inflammation of the brain or its envelopes, constipation of the bowels, disease of the muscles of the head, as in rheumatism, if unconnected with disease of the nerves, disease of the periosteum of the skull, anæmia without manifest neuralgic derangement, and perhaps other forms of disease, are distinctly recognizable, and deserve mention in any systematic arrangement of *headaches.* But this paper is intentionally limited to *neuralgic* pains in the head, and those of a different origin therefore can only be alluded to.

Neuralgia of the face is a disease that has its seat in the sensory branches of the trifacial or fifth pair of nerves, the largest pair that are derived directly from the brain. These nerves have two roots, and the largest of the two are sensory in their functions. In their extension, the branches of these nerves, after the large root has terminated in the semilunar ganglion which is in front of the apex of the petrous portion of the temporal bone, taking the name of the ophthalmic, and superior, and inferior maxillary nerves, spread over the entire face, from the top of the temples to the teeth in the lower jaw—having a distinctive name for each branch that ramifies to each separate organ.

The Ophthalmic branch of the fifth pair of nerves is the smallest one of the three, and springs directly from the semilunar ganglion. It divides into three other branches, that all pass through the sphenoidal foramen into the orbit of the eye; the lachrymal branch going to the lachrymal gland and upper eyelid—the frontal branch, which is the largest, going to be distributed to the skin and muscles of the forehead and upper eyelid, and the nasal branch, after being divided into two principal branches, supplying the mucous membrane of the nose and the eyelids, the lachrymal sac, and the skin of the nose.

The Superior Maxillary nerve is larger than the former. It springs, also, from the semilunar ganglion, as a flattened cord which soon becomes round, and passes out of the cranium through the rotund foramen of the sphenoid bone. After crossing the upper part of the pterygo-maxillary forsa, it enters the infra-orbital canal, and thence it reaches the face, dividing into the temporo-malar, the spheno-palatine, the dental, and infra-orbital branches. The temporo-malar branch enters the orbit through the spheno-maxillary foramen, where it divides into filaments that pass through the foraminæ of the malar bone, and are distributed to the skin of the temple and cheek. The dental nerves are divided into two branches. The posterior branch soon divides into two or three parts, which descend behind the tuberosity of the superior maxillary bone, and entering small canals in the walls of the maxillary sinus, go to the back teeth and to the gum of the upper jaw. The infra-orbital nerves come out at the infra-orbital foramen, and branches reach the lower eyelid, the upper lip, the side of the nose, and the mucous membrane of the cheek.

The Inferior Maxillary nerve, formed by the union of some small branches of the trifacial nerve with the third branch of the semilunar ganglion, emerges from the cranium through the oval foramen of the sphenoid bone. It immediately divides into two branches. The smaller branch divides and sends branches to the temporal, the masseter, the buccinator, and the pterygoid muscles; and in its sensory division, or the larger division, separates into the auriculo-temporal, the lingual, and the inferior dental nerves. The auriculo-temporal branch of the larger or sensory division of the inferior maxillary nerve, comes out between the ear and the point of articulation of the lower jaw, and is mainly distributed to the skin of the temples. The lingual branch of this nerve spreads by means of small branches upon the mucous membrane of the mouth, while the larger portion extends to the tongue, ending at near the extremities of the papillæ of taste. The inferior dental branch enters the dental canal of the lower jaw, and sends divisions to each of the lower teeth, to the lower lip, the chin, and the muscles and skin of the floor of the mouth.

It is absolutely necessary to understand the function and the divisions of this, the trifacial or fifth pair of nerves, in order to understand and successfully treat neuralgia of the face. Under the mistaken notion that the Facial or Seventh pair of nerves, which are the motor nerves of the face, was the seat of neuralgic pains, applications have been made to them and their branches, and operations performed on them which gave no relief to the patient, but unfortunately destroyed the function of voluntary motion in some important muscles.

Neuralgic pains as the result of disease of the fifth pair of nerves or of some of the branches of those nerves, may be felt at any point to which they are distributed, and in any degree of intensity from a slight uneasiness to the most intense agony. But some branches and localities seem more liable to painful affections than others. The region over the eyebrows, the forehead, and temples, the nose, the infraorbital region, the canine fossa, the lips, the chin, the gums, the lining of the cheeks, and much more rarely the helix and the external ducts of the ear, have all been observed to be the seat of neuralgic pains. The tongue, the palate, the eyelids, and the skin above the ear, are very seldom subject to neuralgic pains.

Neuralgic pains in some one part of the ramifications of the fifth pair of nerves, has often been mentioned under some name indicative of the locality of the suffering, as, Frontal neuralgia, Supra- and Infra-orbital neuralgia, Infra- and Supra-maxillary neuralgia, and Facial neuralgia. These pains are usually confined to one side of the face, but sometimes appear on both sides at the same time.

The pain in neuralgia of this part of the system, very seldom comes on suddenly very severe, without premonitory symptoms; but is sometimes decidedly periodical. The character of the pain can with difficulty be described, but may have a sense, as it were, of extension, of pressure, of drawing, or of tickling, extending over the skin or the region affected, with a change in the temperature of the part. At first the patient may think there is to be a local phlegmon of some form, as tooth-ache or the like, until the extension of the pain, with lightning-like flashes and the sense of tearing, will indicate the nature of the disease, and perhaps, its locality.

The premonitory symptoms are usually of but short duration, commencing sometimes with a sense of a kind of *aura* in the depth of the soft part of the face, and also a peculiar tenderness at the pit of the stomach, soon followed with a tingling or tickling in the face, and spasm of the muscles of the cheeks and temples; often the pain extends in the direction of the branches of certain nerves, as the infra- and supra-orbital nerves, or of the supra- and infra-maxillary branches, passing almost like flashes of lightning, but seeming most severe at the extremities of the nerves in the skin or in the mucous membrane, or, perhaps, in the orbit of the eyes, or in the centre of the bony structures. The pain is of overpowering severity, quite surpassing all other forms of distress, and far beyond the power of the patient to express. The cessation of the pain is often as sudden as the attack, but the entire sensation of suffering does not pass away always; but the continuous distress, although considerable, is but little regarded by the patient. But at times the continued distress becomes more severe and important, particularly that felt on the outside of the skull, which, if very severe and long continued, may indicate that a tumor or carcinoma of the brain is the cause of the prosopalgia. Sometimes pressure will indicate acute sensibility, and it may even bring on a paroxysm.

When the pain radiates and extends to the back part of the head, the neck, the intercostal spaces, the shoulders, the mammæ, or to the lower extremities, the indications are that other nerves are involved in the disease besides the fifth pair. The ringing in the ears and dimness of sight that are observed in some cases, are, apparently, simply sympathetic.

Very often, during a severe paroxysm of pain, there may be observed spasmodic motions of the muscles that appear to be caused by reflex action through the motor branches of the nerves. Spasmodic twitchings of the face, or motions of the eyelids, both on the diseased and on the healthy side, or tremors of the whole body. These movements may not always be entirely involuntary, but are resorted to with the hope of obtaining some relief from the tormenting pain.

Very strong and otherwise healthy persons, under the extreme torture of this neuralgic suffering, will fall down in a state of almost utter loss of self-control; the eyes will become scarlet and start from the socket, and the face become dark purple. A very remarkable condition is that which produces violent pulsation of the arteries, engorgement of the veins, and redness of the face, and at the same time, decided increase of the temperature of the body, while the affected side of the face assumes an appearance strikingly different from the well one, becoming pale, and glistening as if smeared with oil. The affected side shrinks, or becomes bloated but flabby.

When the ophthalmic nerve is the seat of the affection, the eye becomes red, and quite watery; but when the second and third branches of the nerves are the seat of the affection in addition, the nose also drips during the paroxysms of pain; affections of the second and third branches sometimes, even frequently, produce profuse salivation; and because of the spasm of the muscles of deglutition, the sputa flows freely out of the mouth.

Sometimes during the paroxysm of the pain, the skin and mucous coverings will be quite dry; but after the pain subsides, there will be a copious secretion of tears, of perspiration over the entire face, and of nasal and buccal mucus. It has been observed, also, that the hair and beard on the parts affected become coarser and stiff, or split and fall out readily, and a kind of erysipelatous inflammation of the surface is almost constantly present all over the affected part of the face.

In the interval between the attacks, the patients usually enjoy good health. The animal functions are performed with regularity, the digestive organs are active, and the mental powers are undiminished; the pulse frequently, even during the attacks, if the vassa motor nerves are not affected and there are no other complications, seems but very slightly varied from the healthy standard.

The progress of the disease in facial neuralgia is very irregular and cannot be predetermined. After the first appearance of the disease, whether the first attack be sudden or otherwise, the subsequent paroxysms of the pain are very irregular, and frequently very unlike each other. Sometimes they may appear of a uniform character, each paroxysm repeating the former ones very accurately, and recurring each day or each alternate day, and at particular hours of the day, but more frequently they occur at irregular and uncertain times, and even during the night, and in all forms and degrees of pain. In some cases the least exciting cause seems to suffice for the production of a paroxysm. A slight impression on the surface, a draught of air, brushing or combing the hair, shaving, the act of chewing or swallowing, mental impressions, disturbance of the digestive functions, irritation of the respiratory organs, or excitement of the genital organs, seem fully sufficient to arouse the slumbering demon of distress.

Between the paroxysms there is a period, and sometimes quite a long one, of entire freedom from pain. Then, perhaps, the returns of the paroxysms may be very frequent. A change in the weather, as the commencement of the cold season, or after a cold spell of weather at any season, or without any noticeable atmospheric influence, the disease again makes its appearance. The removal of the imaginary, and, perhaps, even of the true original cause or origin of this disease is not sufficient for its cure, for it frequently continues as an independent affection the same as neuralgia of the head does, after the original disturbance has ceased. In some cases the paroxysms at first are moderate, and do not recur only at long intervals, but increase in severity and frequency as the disease progresses. Less frequently the reverse is true, and the disease becomes more endurable and less frequent in its return, until a complete cure is effected.

The Causes of facial neuralgia are manifold. Age has a very decided influence on its appearance. During the period between thirty and fifty years of age, it is the most frequent; children and aged persons are almost invariably exempt from it. Girls under thirty *may* have the disease, but even among them it is very rare. Some consider females to be more liable to it than males, but the statistics do not sustain this opinion. Season and temperature exert a marked influence on its appearance. Cold seasons and cold weather are very liable to induce an attack.

In some cases this disease is produced by local diseases, or diseases of parts or organs to which this fifth pair of nerves are distributed. Cancer within or without the cranium, nodes on some part affecting a branch of the nerve, exostosis of the cranial or facial bones, caries of the temporal bone with gatherings of pus, exostosis or caries of the teeth, foreign substances, as glass or other matter under the skin or in the substance of the muscle, tumors or cysts, and perhaps inflammation of the nerve or its covering, have been observed to produce facial neuralgia.

A sudden cold in the head appears to be the most frequent cause of neuralgia of the face; and this form of the disease seems quite amenable to treatment; yet, when facial neuralgia even from this cause becomes *habitual*, it is difficult of cure. Miasmatic emanations are another frequent cause of the disease. When produced by miasm, the disease frequently recurs with decided regularity, and is sometimes accompanied with chills, heat, sweatings, and frequency of the pulse. Some have supposed cases of facial neuralgia to have been produced by piles, by gout, rheumatism, itch, intestinal irritation, torpor of the liver, and other diseases.

We are to consider that often the neuralgic pain in the face is only *sympathetic* of some other and distant derangement, and that the main object of the physician is first to discover and remove the original affection, and then to direct his efforts against the local distress.

When the nerves themselves are affected, we must determine what particular nerve is the seat of the disease, and the origin as well as the ramifications of that nerve. When there are several nerves involved, we must determine where the origin of the trouble exists, and if any of the nerves are rendered painful by reflex action, and which are thus affected.

The diagnosis to be correct must be based on an accurate knowledge of the anatomical relations of all the branches of the fifth pair of nerves, and upon the apparent connection of the recurrence of paroxysms of distress with any known external cause, as changes of the weather, as well as any apparent connection with derangements in other parts of the system of the patient. Every circumstance in connection with the disease should be noted and carefully investigated.

The Duration of facial neuralgia depends upon many conditions and circumstances. It may disappear speedily under the appropriate treatment, or it may gradually diminish in intensity and frequency of attack; but not seldom it continues during the lifetime of the patient, relieved, but not cured by any treatment adopted, and the patient finally dying from some other malady.

The final result of neuralgia of the face depends much on the original cause, although the disease in some cases becomes *habitual.* Those of a hysterical origin are usually the most quickly cured. Those produced by miasmatic influences are also easily subdued. So also are those produced by mechanical injuries, a severe cold, and some other causes. Generally the attacks become less severe, and return more seldom, but even after a long absence there still is reason to fear a return. Instances have occurred where the disease entirely left one side of the face and appeared on the other side.

Mental emotion, melancholy, and a want of enjoyment of life, with even a hope for speedy death, are common in this disease. Under the influence of this disease, and a dread of the agony of future paroxysms, patients have been led to commit suicide. It may be that these mental conditions are not the *direct* results of this disease, but may, in part, be the result of the *causes* that produce facial neuralgia, and of the other derangements of the system produced thereby. The suffering endured in this disease is very exhausting, and depresses the vital forces, which leads to fatal results from disorders that would not otherwise produce death.

The Prognosis of neuralgia of the face is exceedingly uncertain. In young persons, and in those where the disease is not of long standing, it can usually be much more readily subdued than in others. Where the patient is placed under favorable external circumstances the cure is expedited. The final, and even the speedy cure of facial neuralgia, depends so much on the conditions of each individual case, that no general prognosis can safely be given. As has been said, facial neuralgia caused by hysteria, by cold, and by miasm, is usually readily curable; while if caused by exostosis, by cancer, or even by some forms of external injury, it may never be *cured*, but can usually be greatly *relieved.—Journal of Rational Medicine, Cincinnati.*

REMOVAL OF PAROTID TUMOR.

By R. L. Mead, M.D.,

Prof. Anat., Rush Medical College.

Mr. J. B., of Earlville, Ill., applied to me on Dec. 6 last on account of a tumor in his left parotid region. He was a young man, 22 years of age, farmer by occupation, of robust appearance, and had always enjoyed uninterrupted health. He received a blow on the seat of the present enlargement two years since. Soon after he noticed the beginning of the present tumor, which has continued to grow steadily and painlessly, but slowly, ever since, until within two months ago, when it began to increase much more rapidly, and, becoming alarmed, he desires its removal.

The tumor now occupies the space immediately below the ear, extending from it above, to a line parallel to and half an inch below the lower jaw, and from an inch behind the posterior margin of the sterno mastoid, forwards overlapping the ramus of the lower jaw to the same distance, making a tumor double the size of a hen's egg.

The tumor was nodulated, readily movable, though it seemed to be attached by a small part of its deep surface, behind the ramus of the jaw. There was no tenderness on pressure, and while it seemed quite firm, there was indistinct fluctuation over a portion of it. It has never been painful in the slightest degree; no discoloration of the integuments, to which it is closely attached, but seems, on a careful examination, to be free on its under surface, with the exception before mentioned.

On the following day, assisted by Dr. Lynn, and Messrs. Comstock, Minesinger and Mehler, students of Rush Medical College, I proceeded to remove it.

I made a crucial incision over the body of the tumor, found it enclosed by an almost cartilaginous capsule; after opening which, I had no difficulty in enucleating it, the point of adhesion, which I correctly supposed to exist behind the ramus, being carefully separated by the point of my finger.

No difficulty was had in its removal, and no vessels divided requiring ligature. The wound was closed by suture, except the lower section, which was left open to allow free exit to pus.

Dec. 8.—Swelling considerable; ordered cold water dressings.

Dec. 9.—Swelling still increasing; headache, with some fever, and wound quite painful. Upon examination I found the wound had healed almost entirely by first intention—the portion without suture healing with the balance, and the consequence was an accumulation of pus. A free discharge of matter followed opening it, removed the other stitches and placed a tent in it. Ordered a saline cathartic and continuance of cold water.

At my visit the following day I found his febrile symptoms much abated; wound discharging; swelling diminishing, and from this no unusual symptoms occurred, and on the 12th, five days after the opertion, he returned home.

The interest attaching to this case is in the relations of the tumor to the Parotid Gland.

It might readily have been mistaken for the Parotid from its situation, and removed as such, while in reality it had no connection with it except at a very small part of its deep surface. The lower portion of the Parotid was found atrophied from pressure by the tumor, but that it was not enlargement of the gland itself, was abundantly proven in the fact that none of the necessary results followed its removal.

It will be recollected that the formation of the External Jugular vein, by the union of the Temporal, Maxillary and Posterior Auricular veins takes place in the substance of this gland.

The Auricularis Magnus nerve, the largest ascending branch of the superficial cervical plexus, breaks up into its distributing branches, many of which join the Facial nerve, upon the Parotid.

The Auriculo-temporal, a branch of the fifth pair of nerves, passes behind the neck of the jaw upwards to the side of the head under cover of the Parotid. Whilst opposite the neck of the lower jaw it sends branches to join the Facial. The Internal Carotid artery and Internal Jugular vein rest closely against its inner surface.

The External Carotid artery passes upward directly through the gland, and while imbedded in its substance breaks up into its terminal branches, Internal Maxillary and Temporal, and gives off its Transverse Facial branch.

The Parotid completely embraces the artery and extends some distance beyond it, lying between the neck of the lower jaw and Mastoid process, occupying the posterior portion of the Glenoid cavity and resting against the Styloid process and Styloid muscles. It also embraces the ramus of the lower jaw, extending beneath it forward between the Pterygoid muscles.

But by far the most serious complication in the relations of the Parotid, in reference to its extirpation, is the Facial division of the seventh pair of nerves. This nerve is one of motion, supplying the muscles of the side of the face. It escapes from the cranium at the Stylo-mastoid foramen, then passing forwards, divides behind the ramus of the jaw in the substance of the Parotid gland into its terminal and distributive filaments, which, spreading out in it, radiate to all parts of the side of the face, extending their supply from above the eyebrow to below the chin.

It will be seen by examining the relations here mentioned that the removal of the Parotid, while it is not impossible by any means, is nevertheless one of the most important and delicate in Surgery. The Facial nerve, from the delicacy of its filaments, and the intimate manner in which they are blended with the structure of the gland, renders their preservation in the removal of the entire Parotid an *impossibility.*

The complete removal of the Parotid will invariably be followed by paralysis of the muscles supplied by the Facial nerve of the affected side, the measure of paralysis being determined by the amount of gland removed, and consequent destruction of nervous substance. Any one who has carefully examined the relations of the gland on the dead subject, must have been struck with the amount of care required to detect any fair proportion of the distribution filaments of the nerve —much less to preserve them.

How vastly more difficult must be the task when the parts are filled with blood, bleeding at every point, and especially in that wedge-shaped mass of it filling the sulcus between the jaw and mastoid process, reaching behind the ramus, directly through which pass the primary trunks of this most important nerve. Add to this the fact that the diseased action necessitating its removal, has most probably caused adhesion to surrounding parts, and we may form some idea of the difficulties in the way of its removal leaving the nerve in its entirety.

These remarks and objections are intended of course to apply to normal formations and distribution of the several parts. I could imagine a case in which we had an abnormally small and favorably placed Parotid, the Facial nerve for instance passing entirely beneath it, when the termination might be entirely favorable. I think the cases where it is reported to have been removed, paralysis not following, must have been thus abnormally favorable.

I have said nothing of the External Carotid, the wounding of which is a matter of comparatively little consequence.

PUERPERAL CONVULSIONS.—This subject is again attracting considerable attention from the medical press. Irrational methods based upon false pathology are being discarded in the better circles of practice. It is beginning to be understood that the convulsions of the puerperal state, are by no means analogous to those resulting from apoplexy or encephalic inflammation. Generally the convulsion is a reflex nervous phenomenon—hence amenable to chloroform and other sedatives and antirritants. Sometimes it is really dependent upon uterine hemorrhage. Convulsions are among the common sequelæ of hemorrhage whatever the source. They can be produced at will in the lower animals by cutting off or materially reducing the supply of blood to parts. The well-known experiments of Dr. Radcliffe forcibly illustrate this. Bloodletting may by its immediate and powerful influence upon the nervous system, sometimes control the eccentric nervous phenomena, but this effect can usually be better secured by other and non-spoliative agents. It is safe to say that excessive bloodletting in puerperal convulsions is not in accordance with the dictates of modern science—nay, more, it is utterly opposed to them. Repeated bloodletting in the same case is either preposterous or worse. Chloroform or Ether, the warm bath, properly selected narcotics, or even stimulants, in their modern use, have wonderfully lessened the terrors and dangers of this formerly often fatal difficulty. Bloodletting possesses a potent influence over the nervous system in common with many other agents; but besides this it wastes and spoils the powers of life. Why use the, collaterally, destructive agent, when others are at hand without attendant peril? The gross mechanical notion of pressure of blood upon the great nervous centres ought by this time to be abandoned, and with it the practice based upon it. Some persons are beginning to ascertain that there is a nervous system, implanted on the organic framework.

DR. J. ALLEN'S REVIEW OF WHO ARE DENTISTS.

In all branches of science or art facts should be chronicled and error discarded. With this view we deem it proper to notice some of the errors in a series of articles recently published in the *Dental Register of the West*, and republished in other dental Journals under the head of "Who are Dentists?" by Dr. Wm. A. Pease. He tells us that

"Dentistry, as a profession, is of American origin. It had its rise in a great public want which nowhere but in the United States existed, and there is little likelihood that it ever will exist in any other country."

The idea here conveyed is, that teeth do not decay except in America. This is an egregious error. But he adds:

"The want that gave it birth gave it also a vigorous growth, unexampled in any other profession—for *dentistry* cannot truly be said to date back much earlier than 1840. The Baltimore College had just been established, and it was thought that, by scientific investigation, means would soon be found to preserve the natural teeth and thus greatly diminish, if not entirely dispense with the necessity of artificial substitutes."

Now if the doctor will look at the history of dentistry he will be able to trace it back more than 400 B. C. Hippocrates and Herodotus were among the Greek writers upon this subject; and from among the Romans we have also the writings of Pliny, Martial, Horace, Celsus, and others, which reflect much light upon this subject. And although as a science it was then in a rude state, yet Herodotus informs us that dentistry was practised in Egypt as a distinct branch of surgery at that time; and corroborating evidences now exist in the fact that good gold fillings have been recently found in the teeth of mummies, which must have been inserted more than two thousand years ago.

Hippocrates informs us that the loss of the natural teeth was supplied with those of artificial, made of bone or ivory, and also human teeth, secured in the mouth by means of ligatures made of flax, silk, gold, or silver wire, attached to other remaining teeth in the mouth. About one hundred and fifty years after Christ, Galen wrote a much better work upon this subject than any of his predecessors, yet very little advancement had been made during the previous five hundred years. During the next fourteen hundred years, various authors wrote upon this subject, among whom were Ætius, Phaxes, Albucasis, Eustachius, and others. In fifteen hundred and seventy-nine, Pakie, a celebrated French surgeon, wrote a very correct treatise upon the teeth. He enjoyed a great reputation, and was appointed surgeon in ordinary to Henry II., which office he held under three succeeding kings. French and English dentists had acquired celebrity in their native countries long before the Americans could claim supremacy in this branch of surgery, and we are much indebted to them for the light they have reflected upon our pathway in this department of science. From the writings of Eustachius, Parie, Hunter, Blake, Fox, Bell, Keocker, Leforgue, Duval, Leroy, and others, we have culled the basis of our profession; and Americans have done much, it is true, to elevate dental science, and a just tribute is now accorded to them by the Europeans, as well as those of our own country, for it. But to say that dentistry *originated* here in the United States, is a false assumption that should not be handed down to posterity in our dental records of the present era. No; the practice of dentistry was first introduced in the United States by Lemair, of the French forces, which joined our army during the revolutionary war in 1778, after which he resumed his practice in this country. Mr. John Greenwood was the first American dentist and he established himself in the city of New York more than fifty years ago.

But Dr. Pease tells us, that soon after the establishment of the Baltimore College: "There followed an active course of experiments and investigations, to determine how far plugs would protect the teeth from further decay. Many of these experiments were necessarily imperfect and ill-directed; and it soon became obvious that people had more confidence in mechanical than *conservative* dentistry, and neglected their teeth. This neglect was ruinous. At last, in 1854, (it is well to be particular about dates,) a rational theory was promulgated for preventing ulceration and curing ulcerated teeth, and about the same time, as if to fix and make that the initial point for the *advent of dentistry as a profession.* Several improvements were made in preparing gold for dental purposes, that enabled dentists to make much more dense and durable fillings, and also to build up and restore the form of broken teeth. *The dental profession was then fairly established.*" "In theory, at least, there was no longer any or but little need of *mechanics* or manufacturers of artificial sets of teeth."

Well might the dental profession then exclaim, "Eureka, Eureka!" The darkness which had so long obscured dentistry at last broke away, and the sun of dental science dawned upon this our happy land, where it nowhere else could shine, and he thinks there is little probability that it ever will. This great effulgence of light has revealed the principles by which a tooth can be plugged and an ulcer cured. Wonderful acquisitions! Dentistry is now fairly established. The doctor seems to have waked up, and fully appreciates the importance of these great principles, compared with which the mechanic (as he calls him) who constructs artificial dentures, sinks into insignificance, and his vocation in this branch of the dental art is gone forever; for he says: "Now, after more than six years' practice of the new method of treating diseased teeth, dentists feel warranted in saying to their patients there is no necessity for losing your teeth." If this announcement had been made one hundred years ago, the following law against obtaining husbands under false pretences, passed by the English Parliament in 1770, would have been unnecessary, so far as the teeth are concerned. This law reads thus: "That all women, of whatever age, rank, profession, or degree—whether virgins, maids, or widows—who shall, after this act, impose upon, seduce, and betray into matrimony, any of his majesty's male subjects, by virtue of scents, paints, cosmetic washes, artificial teeth, false hair, Spanish wool, iron stays, or bolstered hips, shall incur the penalty of the law, now in force against witchcraft and like misdemeanors, and the marriage, under such circumstances, upon conviction of the offending party, shall be null and void."

(To be continued.)

IMPROVED FORCEPS.

Montreal, June 1st, 1861.

Dr. W. B. Roberts: Dear Sir—Your improved style of wisdom teeth forceps I ordered, reached me by express in good order. But imagine the expression of my face when I unpacked those crooked instruments, and examined the twists and turns in their beaks and handles; I think I must have twisted my face in about as many shapes as your instruments have. In the meantime, I imagined them feeling their way to the posterior part of my mouth in search of the *Dens Sapientia.* At first I was at a loss which end to take hold of, but it soon occurred to me how they could be used to the best advantage. So I seated my assistant in the operating chair to see how they would fit upon the tooth, and the adaptation was so complete that I was tempted to extract his tooth, in order to try the new instruments. I now became impatient to have some one arrive at my office with a diseased superior wisdom tooth (not knowing they were equally good for extracting molar teeth.) At last a case presented itself. Some one had tried to extract it, and had broken it off even with the Alveolar process. Upon examination I found all the teeth firmly set in the jaws, with none diseased except the one to be extracted, and upon further examination I found it was so situated as to require turning outward towards the cheek, which could not be done with the ordinary forceps. after introducing the new instrument and grasping the tooth firmly, I turned it out gently, at the same time pulling, and, to my great surprise, it seemed to fairly shoot from its socket. I must confess I have never used an instrument to equal this for extracting this class of teeth. The handles being so bent as to come in the centre of the mouth, there can be no straining of the muscles of the mouth during the time of extracting. No money would buy mine if it were impossible to get another set. No dentist should be without them, who has the least spark of humanity in his soul, as the amount of pain he would save his patients yearly would certainly be a greater recompense than gold would be. Why do we not see more of these instruments in the market and in the dental offices? Yours truly,

M———.

We might, if time and space would permit, give many reasons why more of our improved forceps are not seen upon the dentists' tables. Some of the reasons that seem to present themselves are as follows: First, we had only one pair manufactured several years ago for our own use—occasionally recommending them to a friend, and having a set made for him; but during the past year we have put in the market quite a number of this improved instrument.

Another reason we presume is, that dentists differ in their opinion very much about forceps as well as every thing else pertaining to their profession, and when they have got used to extracting a tooth with a jack-knife and turnkey, or one pair of forceps for every tooth in the head, it is rather hard convincing them that any thing else is better, and it requires time to work a reformation in this direction. They do not stop to consider that with the proper instrument a vast amount of pain might be spared the patient, but say to themselves, I can get out this tooth with my instrument hurt or no hurt, as I am not the one to suffer. Again there are but few dentists who have had the opportunity of seeing this instrument, knowing, at the same time, that if there was no better instrument than the old one for extracting this class of teeth, there ought to be, and they would have them if they knew where they could be obtained.

We hold it to be the duty of every dentist to have the proper instrument for extracting all classes of teeth that will produce the least possible pain to the patient, regardless of expense for the same; as it never yet has been discovered by dentists or patients that this operation is made pleasant by the best instrument or the most scientific operation.—EDITOR.

A SUGGESTION.

By Prof. J. Richardson.

WHEN we affirm that it is legitimately a part of the mission of those now engaged in the cultivation of dental science to *educate* the medical profession in regard to many important points relating to general practice, we assume that the *truthfulness* of the expression will justify its apparent *egotism.*

The practice of medical men, with rare exceptions, reveals, almost daily, a lamentable want of appreciation of those important pathological indications so frequently furnished by diseased conditions of the dental organs, as well as failures to recognize the positive dependence of serious and oftentimes fatal maladies upon these primary sources of morbid action. That this is so, is no just disparagement of the medical practitioner, for there are obvious reasons why he should be at fault where the teeth are concerned. His vindication is complete in the fact that the present instrumentalities employed as means of imparting a medical education afford no adequate opportunities for the acquirement of the truths and facts so amply revealed, by observation and experience, to our own profession. The medical student, during his term of pupilage is restricted to such sources of instruction as, by the usages of the faculty, are presented to him, and these are comprehended in the oral instructions of preceptors, the teachings of medical text-books, and in medical lectures and hospital clinics. In the office of his preceptor he makes no progress in a knowledge of our department beyond what he may glean from his books. The preceptor rarely repairs, by study, the defects of his own education in respect to the teeth, and he could not reasonably be expected to impart information to his pupil of which he was not himself possessed. However diligent the student may be, he will advance but little beyond a somewhat meagre knowledge of dental anatomy and histology by consulting any strictly medical treatise that is likely to fall in his way; and as to dental pathology, all accessible information is chiefly embraced in accounts of the local and constitutional disturbances incident to *teething*. The multiform affections connected, either immediately or remotely, with diseased conditions of the teeth are practically ignored. Neither will he find, in the elementary works which are accessible to him, any facts worthy of attention concerning dental therapeutics or hygiene. Thus the medical student passes from his preceptor and office studies almost wholly unconscious of any truths in dental science that would serve him any useful purpose in practice. He next enters a medical college, and here, as elsewhere, whether in attendance upon didactic lectures or hospital clinics, the same silence prevails upon this important specialty; and, finally, with the indorsement of the school, he goes to his field of labor profoundly ignorant of what he must sooner or later discover it is eminently his interest to know concerning diseases of the teeth in general practice.

If, therefore, the educational appliances just enumerated fail, as they manifestly do, to confer upon the medical student and practitioner a knowledge of this department commensurate with its just demands, there is a plain obligation resting upon our young but advanced profession to supply this *hiatus* in medical teaching. That such a contribution would be received with great favor by the mass of medical men in active practice there is not a doubt, for whatever their deficiencies in a knowledge of this specialty of pathological science may be, they arise not so much from indifference to the subject, or the neglect of opportunities, as from a want of accessible means of instruction. Ample sources of information exist in dental works, and in current dental literature, but the material proper for appropriation is obscured by such a mass of matter wholly foreign to the requirements of the medical practitioner, that the latter has neither the time nor the courage to go on a voyage of discovery through whole volumes, to sift out here and there a fact that might profit him in practice. It is only those physicians of acknowledged industry who, enjoying a full or even fair practice, are able to post themselves in the constantly accumulating facts of their own current literature, and hence, whatever is presented to them relating to those specialties which embrace in their study much (to them) irrelevant or immaterial matter, should be so disencumbered, epitomized, and arranged, as to command their attention from its obvious practical nature and direct application to their wants.

In the nature of things, it is improbable if not impossible that any one person or association of persons not practically conversant with diseases of the dental organs and their influences as immediate and predisposing causes of disease in other parts of the organism, could adequately meet the requirements of general practitioners; hence it becomes the dental profession, as the great repository of the facts and principles of dental science, to respond in some fitting manner to a want everywhere acknowledged as imperative.

The teeth sustain very intimate anatomical and physiological relations with some of the most important viscera of the body, both by continuity of structure and by nervous and vascular communication, and it would be well, for the credit of the "healing art" and the interests of humanity, that the attention of physicians should be called, in some more direct and emphatic manner than heretofore, to their diseases as predisposing and exciting causes to some of the most formidable lesions known to pathology.

It is the reproach of *curative* medical science that patients are, day after day, incontinently and fruitlessly drugged for the relief of maladies which, being purely symptomatic of or dependent on dental disease or irritation, are diagnosed and obstinately and perseveringly treated as idiopathic affections. It is the reproach of *conservative* medical science that countless numbers of teeth are, year after year, uselessly and mercilessly sacrificed through the direct agency or complicity of medical practitioners. It is the reproach of *sanitary* medical science that, while the greatest circumspection is displayed in guarding the many approaches to the citadel of health, one of the most exposed and vulnerable points, whose defence is essential to the general safety, should be left so entirely uncared for. A well known dental writer has truly said: "Almost inappreciable are the beginnings of many fatal diseases, and could the grave reveal its secrets, I have not a doubt, when I consider the number of diseases produced by diseased teeth, that it would be found that thousands are there in whom the first fatal impulse was given by a diseased state of these organs; and could I raise my voice so as to be heard by every medical man in America, I would say to them, attend to your patients' teeth; and if they are diseased, direct such remedies as shall restore them to health; and if in health, such means as will keep them so."

The inquiry here naturally presents itself, what mode of communicating with the medical profession will best serve to enforce the admonitions and instructions so happily expressed in the above quotation?

Various means offer themselves for our consideration. Intelligent dentists may, and already have accomplished much through the opportunities afforded by personal and professional intercourse with physicians. It is, in a large degree, in this way that the present interest in the subject, and increasing desire for farther information, has been awakened in the minds of medical men. But, while we are not insensible to the advantages of personal communication in eliciting facts of value to the general practitioner, every dentist's influence being localized and his opportunities for consultation limited, the communication of the necessary knowledge, even in its aggregate application, is too insufficient and circumscribed to satisfy the wants and expectations of our medical brethren.

The publication of office pamphlets or tracts, while they may be profitably employed to instruct the popular mind, are, for obvious reasons, wholly inadequate to fulfil the requirement under consideration.

The establishment of a chair in medical colleges devoted to dental teaching has been regarded generally with disfavor, and, on plausible grounds, may be regarded as inadequate if not impracticable.

There remains one other mode which would seem to be practicable and effective—the publication of a systematic treatise or manual, which should embrace a full and practical consideration of such subjects connected with the teeth and their diseases as would interest and profit the general practitioner of medicine. The character of the work should be such that every physician, who is ambitious to render the highest skill to his patients, would gladly place it in his library and bring into daily consultation in his practice.

Is there any present assurance or prospect that such a treatise will be voluntarily produced within a reasonable time as the result of individual enterprise? The profession, we believe, has had no intimation of such a design. That there is a respectable number of practical dentists in this country who are competent to construct a work of the kind in a manner creditable to the profession, I presume will hardly be questioned.

That the object in view may be accomplished without unnecessary delay, and in order to engage or secure, at the earliest practicable period, the best services of those who might, on solicitation, be induced to devote themselves to such a task, we would respectfully suggest that the American Dental Association, as a body competent to act in this matter, authorize, at its next meeting, an award for the best dental prize essay or treatise constructed with especial reference to the necessities of the general medical practitioner. We have nothing to offer here in regard to the terms or conditions of the award, desiring only to present the *fact* to be acted upon. We cannot entertain a doubt but that such a work, emanating from and indorsed by such a body, would command at once the confidence and patronage of medical men. On this subject we should be glad to hear from those who have an opinion to express, and have thrown out these thoughts in the hope of engaging the attention of those members of the dental profession who have truly its interests at heart, and who have a just conception of its obligations as a co-ordinate branch of medical science.—*Dental Cosmos.*

SELECTIONS.

Lock-Jaw.—*Messrs. Editors:*—In your Journal for Nov. 17th, you allude to a ridiculous mistake in diagnosis, and mention a case of dislocated jaw that, by a homœopath, was mistaken and treated for *lock-jaw*, with the jaw *locked* open! That case brings to my mind another. When I was a six-month student of medicine, a neighbor, while vomiting, dislocated his lower jaw. He consulted an *eclectic*, who, after an hour's fruitless attempt at reduction, told him he was engaged to go out with a company on a pleasure excursion, and he would give the case further attention on his return. Not being willing to wait, the patient consulted a homœopath. He, too, made a fruitless attempt at reduction. He then gave the patient some of his globules to be taken, and a liquid with which to bathe the face, and left, promising to renew the effort at reduction on the morrow, providing it did not replace itself in the meantime! Half an hour later, I saw the patient. He presented a ludicrous aspect, and, indeed, seemed like one poorly resigned to his fate. He couldn't *jaw* his previous medical attendants, for the reason his jaw wouldn't work. I offered my services, (students are not amenable to the code,) and reduced the dislocation without difficulty. When the homœopath renewed his visit, and learned the condition of things, he took glory to himself by saying that no man living could have reduced that dislocation, *if he had not given medicine to "relax the cords!"* The aspirant for surgical glory left abruptly when the patient informed him that none of the medicine left had been used!—*Medical and Surgical Reporter.*

ON TEETHING.

Written in the year 1777, by Dr. Cook. Copied by Dr. C. Brewster.

Dr. Arbuthnot observes "that above a tenth part of infants die of teething, by symptoms proceeding from the irritation of the tender, nervous parts of the jaws, occasioning inflammations, fevers, convulsions, gangrenes, etc."

The symptoms are, in great measure, owing to the great delicacy and exquisite sensibility of the nervous system at this time of life, which is but too often increased by an effeminate education; when it happens that children who are delicately brought up always suffer most in teething, and often are carried off by convulsive disorders. Melancholy it is to think that, among all the disorders that afflict the little innocents, there are none that generate such grievous symptoms as difficult dentition; and I am sorry so little material aid can be rendered by our medical art to prevent or remove that great sorrow the parents suffer, and the pain their infants endure, in so difficult breeding of their teeth; as what is within must needs come out.

Children about the time of cutting their teeth slaver much, and have generally a looseness. When the teething is difficult, especially when the dog-teeth begin to force their way, the babe has startings in his sleep, swelling of the gums, inquietude, watchings, gripes, green stools, the thrush, fever, difficult breathing, shricks and cries, and lastly, convulsions seize it.

Wherefore difficult teething is, in all respects, to be looked upon and treated as an inflammatory disease. If the belly be bound, it should be loosened, either by emollient clysters or gentle purgatives, as manna, magnesia, rhubarb, or senna tea. The food should be light, and in small quantity; the drink plentiful, but weak and diluting, as infusion of balm or lime-tree flowers, to which add a third or fourth part of milk.

All the relief that we can give such early sufferers is to attend to every symptom that may arise, which are commonly cured, or alleviated at least, by the very same method, viz., by absorbent and temperating medicines, and then generally cathartics, that do not enter to disturb the blood; as half a scruple or more of magnesia or crude tartar at a time, reduced first to a fine powder, and exhibited in a little solutive syrup.

If the fever be high, bleeding will be necessary; though this, as before observed, should always be sparingly performed. It is an evacuation which infants bear the worst of any; purging, vomiting, or sweating agree much better with them, and are generally more beneficial. Dr. Harris, however, observes that, when an inflammation appears, the physician will labor in vain if the cure be not begun with applying a leech under each ear. If convulsions happen, apply a blister plaster between the shoulders, or behind each ear, as the last resort.

Sydenham recommends three or four drops of spirits of hartshorn, but a larger dose is better. It may be given from five drops to fifteen or twenty, according to the age of the infant; and when costiveness forbids it not, three or four drops, at most, of laudanum may be added now and then, to abate the pain and gain a truce for a short time.

Their slavering and looseness are no bad signs, but are salutary, as they would become worse without them, because the nerves sent to the stomach and intestines proceed from a coalition of the intercostal and par vagum, or eighth pair, which have a communication with the fifth, a branch of which is carried to the teeth and jaws; whence also is the spasm of the genus nervosum, which follow too sharp purges and indiscreet use of mercurials.

In Scotland, it is common, when children are cutting their teeth, to lay on a small Burgundy pitch plaster between their shoulders; which generally eases the tickling cough that attends teething, and is by no means a useless application; for, as trifling to some as it may appear, when the teeth are bred with difficulty it ought to be kept on during the whole time of teething. It may be enlarged as occasion requires, and ought to be renewed at least once a fortnight.

About the sixth or seventh month, the teeth generally begin to make their appearance—first the fore-teeth, next the two dog-teeth, and lastly the grinders. About the seventh year there comes a new set, and about the twentieth the two grinders, called the teeth of wisdom.

Think not I tell this to nurses; but to persons of learning, who probably may chance to read this useful undertaking; a work surely much needed, and never before, that I know of, thus *ex professo* undertaken; wherefore I hope it will be the more acceptable.

Several things have been recommended for rubbing the gums; as oils, mucilages, hare's brains, or cream. Anoint them often with sweet-oil, or with oil of sweet almonds, with a feather; or rub their gums with a mixture of either of these oils and syrup of violets or wild poppies, lightly acidulated with a drop or two of spirits of vitriol, to cool the parts and abate the pain. But from these much is not to be expected; but ever so little relief is better than none. To rub the gums gently with a little fine honey three or four times a day is as good as any thing; but if the pain becomes intolerable, it may be appeased for a season with giving gentle opiates, as a teaspoonful of jalap, or camphor, or solution of assafœtida, or, last of all, with two or three drops of liquid laudanum, prepared with plain water, giving, two or three times a day, five or eight drops of spirits of hartshorn in a small spoonful of soft water.

Children at the time of teething are generally disposed to chew whatever they get into their hands. For this reason, they should never be without something that will yield to the pressure of their gums; as a crust of bread, a wax candle, or a bit of licorice-root, and such like; which shows the impropriety of corals, and such hard and impenetrable bodies.

But I should think lancing the gums crossways, by any sharp instrument that can with safety be introduced into their mouths. And I hope, from this hint, an ingenious surgical instrument maker will soon contrive one fit for that operation; for as to the use of the nurse's nail, or even the edge of a sixpenny piece, I have no good liking, as they, by being blunt rather bruise than cut asunder the distended gum. I have been the longer on this article as the case is so common, so very painful, and often so very mortal.—*The Dental Cosmos.*

EDITORIALS AND CUTTINGS.

DENTISTRY IN THE ARMY.

The sad misfortunes of the Crimean war, owing to imperfect attention to the sanitary condition of the British army, opened the eyes of the whole civilized world to the importance of a proper sense of duty in this connection. It is not surprising, therefore, that humane and far-seeing men in this country should have taken an early opportunity in the present campaign, to press upon the government the almost incalculable importance of great care in the superintendence of the sanitary department of the army. Thus every effort is being made to attach to each regiment all the requisite force with all the necessary equipments to perform the work given to them in an efficient and satisfactory manner. There is probably very little to be said in the way of advice to such gentlemen as are thoroughly imbued with the importance of the subject, and as thoroughly acquainted with all the means and appliances necessary to it; but there is one point which has appearently escaped the attention of persons in authority, on which we wish to say a few words. During the last twenty years, and owing principally to the efforts of our own countrymen, Dentistry has become elevated from a mere branch to a distinct science. Colleges have been founded, societies formed, conventions held, professorships endowed, and all to give the greatest insight possible into the structure, physiology, and pathology of the human teeth. It has been found, as men progressed in the study of these organs, that their disease spread its ramifications through the whole animal economy; all the functions of the body have been affected and indeed suspended by the existence of a foreign and improper condition in the teeth; the whole sanitary condition has been altered, and the most serious complications of disease have attended the existence of diseased teeth.

Thus dentistry has been taken out of the hands of the surgeons and doctors, and has formed a separate profession of enlightened, educated and scientific men, understanding as a necessity not only their own immediate calling, but also no small share of surgery and pathological anatomy. A few years since, the question was raised in England as to the propriety of attaching dentists to the British army and navy; considerable had been said upon the subject, and it was well known that the teeth of the soldiers and sailors were in a deplorable condition; but after a temporary prospect of success the subject was dropped. Meanwhile, in the French army, with that sense of propriety that always characterizes the French nation, means had been taken to extend a proper attention to the wants of the body, and the teeth; the men were supplied with brushes, and compelled to keep their teeth cleaned; and thus the matter stands in Europe at the present time. We have referred to this subject, because it seems to us that here, where dentistry has progressed more than in any other country, it is right that the first steps should be taken to still further advance it. And we desire especially to show the value that it might possess as a sanitary instrument, if proper efforts were made to invest it with the importance it deserves. It is almost needless to refer to the necessity for having good teeth in our army and navy; first, for mastication; and, second, but most important, for their effect upon the general health; and upon this last subject we desire to give some information.

Careful mastication is essential to perfect digestion, and this latter, more especially in the active life of the soldier or sailor, is a primal necessity for healthy existence.

Very few persons are aware of the derangements which may be produced by diseased teeth, although the period of dentition in children is generally considered as one of the most critical in life. It is, indeed, estimated by some writers, that one tenth of all the deaths in the world, occur during the period of the first dentition. The animal frame is in infancy so delicate, that the least local irritation produces a sudden and universal sympathy throughout the whole body. Fever is a very frequent accompaniment of teething; also an affection of the skin, resembling measles; pustules sometimes appear, not unlike a mild form of small-pox; diseases of the scalp; diarrhœa; convulsions; diseases of the lungs; and in fact, symptoms of nearly every form of disease may be met with during, and resulting from dentition. If we know that this terrible catalogue of evils is attendant upon the growth of the teeth during infancy, is it not rational to suppose that a healthy condition of these organs is essential to adults, when we consider the close connection existing between the teeth, alveolar process, the parotid, sub-maxillary and sub-lingual glands, on the one hand, and the mucous membrane of the mouth, which is continuous with that which lines the pharynx, œsophagus, stomach and intestines, on the other. It is well known to the dental practitioner, the physician and surgeon, that if a tooth becomes diseased, all these organs will to a certain extent, sympathize with it, independent of the agonizing and excruciating pain caused by the exposure of the nerve. Cases have been given where inflammation of the mucous membrane has extended so far as to produce consumption; while dyspepsia with all its attendant horrors may be, and often is caused by improper and insufficient mastication, which must necessarily result from the possession of poor and imperfect teeth. Neuralgia and *tic-douloureux*, probably the most fearful pains with which the human race ever suffers, often proceed in the first instance, from exposed nerves; and other acute and chronic inflammatory diseases frequently spring from carious teeth and diseased gums, ruining health, and disabling their victims from performing even the most simple duties of life; and in the case of the soldier who is exposed night and day to every variety of inclement weather, and every quality of fare, the chances of such diseases establishing themselves through the means of diseased teeth are greatly multiplied.

It is well known to the dental profession that all the diseases common to the teeth, can not only be cured, but may be prevented by proper and timely treatment. After thus having enumerated the evils appertaining to a defective condition of the teeth, a condition which experience has found to exist among the army to an extraordinary extent, and having shown the importance of such diseased condition being avoided and changed, to aid in establishing a proper sanitary condition among these men who risk their lives for their country's service, and have neither time, means, nor opportunity for themselves discharging their duty in this respect; we desire to urge upon the proper authorities, that a corps of dentists, or dental staff, should be attached to the United States army, similarly organized with the surgical department, who would act in connection with and as an efficient aid to that department, besides performing their own duties in a proper manner. Holding this to be a great sanitary measure, as well as an economical and humane movement in behalf of those affected by it, we would especially offer these suggestions to our "Sanitary Commission," believing that in the scope of their noble field of labor, there could not be performed a more important act, than the procuring of the passage of a bill through Congress at the approaching session, which should incorporate into the army an efficient DENTAL staff, strengthened with all the powers necessary to enable it to become most serviceable to the cause of health.

Since the publication of the above article in the *New York Medical Times*, we have collected a few facts which enable us to present the rough draft of a plan for establishing a dental department in the army, and which will present the subject more fully than we could otherwise hope to do. Of course this plan is not intended to direct the government as to the proper method of arriving at a perfect organization—a matter of which they are better able to judge clearly than we; but it is to exhibit as far as possible the capacity of such an organization for good; to explain the duties of all those comprised in it; and to present some few of the results which must follow its establishment. Suppose, then, a department formed by the Secretary of War, and attached to the war department, entitled the "Dental Department of the United States Army," to consist of,

1st. The *Dental Surgeon-General*, appointed by the Secretary of War, and reporting annually to him; having power to appoint *Dental Inspectors.*

2d. A board of three competent dental surgeons, entitled the "*Board of Dental Surgeons,*" whose duty it shall be to examine applicants for appointment as *Dental Surgeons* and *Assistant Dental Surgeons,* such applicants to be designated by the Secretary of War, and only to receive their appointments when declared duly qualified by the board; the said board to be appointed by the Secretary of War. The same board to examine candidates for promotion.

3d. *Dental Inspectors,* to be appointed as before mentioned. Their duties to consist of a careful inspection quarterly, of all soldiers belonging to the posts to which they may be attached, and an exact report after each inspection to be made to the Dental Surgeon-General. One inspector to be attached to every post comprising not less than two, and not more than four regiments, their numbers being increased in that ratio.

4th. *Dental Surgeons,* of whom there should be one attached to every regiment; applications to be made through the Secretary of War. It should be the duty of each of these officers to regulate and generally attend to the teeth of his regiment; extracting, filling, regulating, treating, &c., as cases might present themselves. He should keep a book containing a perfect roll of the regiment, and designating by means of diagrams the condition of the mouth of every man in it. He should exhibit this book as his report, quarterly, to the *Dental Inspector.* He should be assisted by,

5th. The *Assistant Dental Surgeon,* to be appointed as aforesaid, whose duty it should be to aid the Dental Surgeon when required, and report to him the progress of all cases under his charge. Applicants for this appointment should be between the ages of 21 and 28 years of age; after serving five years, they should be eligible for promotion, after submitting to careful examination by the Board: if they decline examination, or are found wanting, morally or professionally, their names should be stricken from the United States service.

The supplies for the "Dental Department" should be furnished, as in the "Medical Department;" the Dental Inspectors drawing for all medicines and other materials necessary for the proper prosecution of the duties of the Dental Surgeon, and distributing them to the dental surgeons of each post. The pay of the Dental Department to be regulated by that of the "Medical Department."

Thus, by some such system as the above attached to the United States army, every recruit would be inspected by the Dental Surgeon on entering the army, and his mouth put into a healthy and proper condition, in which condition it would be kept during his time of service; a judicious series of regulations would compel every soldier to keep his teeth carefully brushed and cleansed, and this of itself would greatly lessen the chances of disease.

DENTISTRY IN TURKEY.

In the course of a highly interesting paper on "Turkey from a Medical Point of View," in the May number of the *N. Amer. Med.-Chir. Rev.*, Dr. W. Goodell gives the following spirited sketch of the state of dentistry in that country: "Upon another occasion, the aristocratic nerves of his majesty were cruelly unstrung by the vulgar twinges of a toothache; which, imitating the example of many a rebellious pasha, traitorously intrenched itself within a molar, and refused to capitulate to the innumerable ptisans, fomentations, nostrums, spells, and incantations of the whole empirical and non-empirical faculty. Spurning the tears of the Sultanas, and the entreaties of all the favorite *Odaliques* of the *harem*, the royal sufferer sleeplessly paced his ancestral halls for several days and nights, before he could screw up his courage to the pulling point. But, to the dismay of the chamberlain, in all Stambul not a barber or dentist, for love of money or reputation, was found so disloyal as to aspire to the *crown* of his imperial sovereign. American dentists may smile at the pusillanimity of their Oriental brethren, but let them remember that any accident in the extraction of a royal tooth, whether fracture, delay, or any additional pain, might consign the bold operator to the bastinado, or to the tender mercies of the bowstring. At last, an obscure Jew, who had never looked higher than the jaws of his Hebrew customers, was induced to risk his heels and his neck in the dental encounter. Thrice prostrating himself, he entreated the Sultan to show his slave the offending molar. Quick as thought the forceps were applied, and immediately the Jew fell down with a piercing shriek, at the feet of his master, in a well-assumed fit of epileptic convulsions. Up jumped the Sultan from his throne, forgetting, in his terror, his toothache, his dignity, and the pain of the extraction, and ordered his pages to bring cordials and water for the unfortunate dentist. The wily Jew, perceiving that a hydropathic treatment was imminent, and that this buffoonery had produced the desired effect of distracting the royal attention, now convalesced with great promptness, triumphantly exhibiting the tooth to the astonished monarch and courtiers. It is hardly necessary to add, that not only was the integrity of his gluteal fascia respected, but Israel went forth from the palace, even unto his kindred, with shekels of gold and shekels of silver."

NEW YORK CITY DENTAL SOCIETY.

This society has adjourned its regular meetings to the second Wednesday in October, when it will resume them. Judging from the last year's proceeding, we have every reason to anticipate much pleasure in the future gatherings of our professional brethren. We presume every member will be ready to add his mite of social and intellectual enjoyment at the appointed time.

EXPLOSION AMONG THE VULCANIZERS.

Of all the machinery attached to the mechanical department of dentistry, none should be more carefully and firmly manufactured than vulcanizers, as an explosion may produce very serious consequences. We have frequently heard of such cases, the last having lately occurred in the establishment of Mr. B. W. Franklin, while testing a new vulcanizer manufactured by some one in the interior of this state. Soft solder had been used to fasten on the head of the machine, and as soon as the machine was sufficiently hot to melt the solder, an explosion followed, blowing the head off (not Mr. Franklin's, but that of the machine), sending it through a thick plastering at a distance of fifteen feet or more, and driving the alcohol lamp downwards through an inch-and-a-quarter plank upon which the machine was standing. Had the machine been thrown out sideways, Mr. F. and a friend, who were standing by it at the time, could not have escaped uninjured. Too much care cannot be taken in the use and manufacture of these machines.

THE AMERICAN DENTAL CONVENTION.

Boston, May 15*th*, 1861.

Dear Sir:—The American Dental Convention will hold its seventh annual session at New Haven, Connecticut, commencing on Tuesday, the sixth day of August next, at 10 A. M. At this you are respectfully and cordially invited to be present.

It is desirable at this period in dental history to place the profession on a firm public basis. While the highest type of integrity shall characterize our professional efforts in our home labors, let us faithfully endeavor, even at personal sacrifices, to give character to the Annual Dental Convention, by contributing in person to the fund of knowledge obtained by hours of patient study and weary toil. Let the Convention be made worthy the appellation of "sisterhood" to the American Medical Society. Although our field is not as varied as hers, there is ample scope for obtaining an advanced position, which will give increased efficiency, permanency, and character to the dental profession. With "Excelsior" for our motto, let us earnestly co-operate in making ours second to none of the learned professions in the land.

Yours very respectfully,

I. J. Wetherbee, *Cor. Sec'y.*

[It would seem from the above circular that our eastern friends are awake, and mean to be at New Haven on the first Tuesday in August; and will see that the profession are duly notified to attend. We have every reason to believe the call will be heartily responded to.—Ed.]

PRIORITY OF CLAIM.

Anæsthesia: Humphrey Davy, Wells, and Jackson all in the Shade!—A correspondent of the *American Medical Times* gives the following poetical extract from the works of Du Bartaz (1590), translated by Joshua Sylvester:

"Even as a surgeon minding off to cut
Some cureless limb; before in use he put
His violent engines on the vicious member,
Bringeth his patient in a senseless slumber;
And griefless then (guided by use and art,)
To save the whole, saws off the infested part,
So God impaled our grandsire's (Adam) lively look,
Through all his bones a deadly chillness strook,
Seal'd up his sparkling eyes with iron bands,
Led down his feet (almost to Lethe's sands),
In brief, so nummed his soule's and bodie's sense,
That (without pain), opening his side, from thence
He took a rib, which rarely he refined,
And thereof made the mother of mankind."

OIL OF TURPENTINE AS AN ANÆSTHETIC.

Mr. John Wilmshurst, in a communication in the *Lancet* (March 2, 1861), states that he has successfully employed the ol. terebinthinæ rect. as an anæsthetic. The first case, he says, "in which I tried its effects was that of Mrs. H., matron on board the emigrant ship *Indiana*, of which I was then surgeon-superintendent. The patient was suffering from violent neuralgia in the course of the supra-orbital nerve; it occurred to me that of the remedies at hand the most likely would be the vapor of turpentine. This I immediately applied, sprinkled on a handkerchief, to the nostrils, similarly to chloroform, and was surprised to find it not merely soothe and allay the pain, but, after a few inhalations, produce a gentle sleep and state of anæsthesia, from which she awoke without any headache or other unpleasant symptoms.

"I may mention, without going into detail, that I have since tried it in one or two slight but painful operations—as extracting a broken needle from a sensitive part, and in some cases of cramps, convulsions, nephralgia calculosa, etc. Its effect seems to be to allay nervous irritation, spasm, and pain, without deranging the action of the heart, and to produce a calm anæsthetic sleep."—*Am. Jour. of Med. Sciences.*

NEW CURE FOR TOOTHACHE.

In the *Gazette des Hôpitaux*, Dr. Calry, of Toulon, suggests the following remedy for the neuralgia proceeding from carious teeth. The decayed cavity is first to be cleaned out, and then a piece of cotton steeped in a solution of six grains of acetate of morphia to an ounce of nitric acid, is applied to the interior. Whenever the caustic penetrates into the carious tooth the pain ceases and the patient is cured. Then the cavity should be filled with cotton steeped in the sedative solution of opium, and afterwards permanently plugged.

TO DRAW TEETH WITHOUT PAIN.

A correspondent of the *American Druggist's Circular*, gives the following anæsthetic mixture to be rubbed on the gums about the tooth to be extracted, by means of a piece of lint or cotton steeped in it:

℞—Chloroform, ℥ iss;
Tr. Aconite,
Spts. Vini, āā ℥ i;
Morph. Sulph., grs. viij. M.

Hydrated Sesquioxide of Iron in Poisoning by Arsenic.—Fazole of Venice has experimented largely on the efficacy of the hydrated sesquioxide as an antidote in arsenical poisoning. Nineteen dogs were poisoned by arsenic—five took no antidote and died; of the fourteen others treated by the sesquioxide of iron, twelve were saved, and two died.—*Cosmos.*

PERSULPHATE OF IRON IN POST PARTUM HEMORRHAGE. — Dr. Geo. Mendenhall, of Cincinnati, reports another case of *post partum* hemorrhage which, not being controllable by ordinary treatment was promptly relieved by intra-uterine injection of two ounces of the saturated solution of persulphate of iron. It should be so applied as to entirely wash the inner surface of the uterus. In those rare cases where the usual methods fail, there can be little doubt that this will furnish a most efficient resource.

VACCINATION.—The collection of large numbers of men together in camps and barracks suggests the precaution that each should present satisfactory evidences of recent successful vaccination, or immediately be subjected to this important little operation. Small-pox in an unprotected camp is a thousand-fold more to be dreaded than the bullets of an enemy. Will our army surgeons see to this ?

CAMP DISEASES.—We trust that our army surgeons will recollect that in time of war a vastly greater number perish from disease than from " villainous saltpetre" or the sword. Rub up your ideas of dysentery, " malarious" fevers, typhoid, pneumonia, &c., patriotic brethren ; adopt the almost infinitely improved methods of modern practice, and let us hear no more of the awful mortality which has formerly attended these diseases in camp.

TO DISTINGUISH STEEL FROM IRON.—A writer in the *Scientific American* tells, to let fall a drop of diluted nitric acid on the surface of the metal ; when on steel a gray spot is produced, and on iron a green one.

A DENTAL COLLEGE is about to be established in the city of New Orleans. Our old friend, Dr. J. S. Clark, is among its warmest friends, and we have no doubt of its ultimate success.

Action of Bismuth.—Prof. J. B. McCaw, in the *Maryland Journal*, gives bismuth in much larger doses than those usually ordered—sometimes even as much as an ounce in the twenty-four hours. Thus in serous diarrhœas and "irritable" bowels. So also to neutralize sulphuretted hydrogen evolved in the intestines. He uses it also as a direct application in erysipelas, burns, excoriations, &c.; also as a general disinfectant in fœtid ulcer, sinuses and malignant sores.

W. B. ROBERTS,

TEETH MANUFACTORY AND DENTAL DEPOT,

649 Broadway, New York,

SUCCESSOR TO J. M. CROWELL.

Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins, ...	20	cents
do do do with holes	15	"
Single gum teeth for vulcanite or cheoplastic base work with pins	15	"
do do do plate work	15	"
Continuous gum teeth, with Roberts' one pin, ...	8	"
do do with two pins, ...	8	"
Plain teeth for vulcanite or cheoplastic base, ...	8	"
do for plate work	8	"

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor; and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as to go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, do do	1 00
Platina, do do	6 50
Etching, Enamel, per box,	1 00
Pure Gold,	1 10

Carvers or Knives for continuous gum-work, etc.

Metals and Minerals.

Gold plate 18 carats,	$0 90	per dwt.
do for clasps,	90	"
Gold solder, 18 carats,	90	"
do 16 carats,	75	"
Pure Gold,	1 10	"
Pure Silver Plate,	2 00	per oz.
Precipitate of Silver,	2 00	"
Townsend's Cement,	1 50	"
Silver Solder,	9	per dwt.
Bismuth,	1 50	per lb.
Asbestus,	38	"

Tin, lead, zinc, and all other metal at the lowest market prices.

Vulcanizers.

Small size alcohol-burning machine, 2 pieces	$18 00
Large " " " 3 "	20 00
Small size gas-burning machine, 2 "	18 00
Large " " "	20 00
Adjustable set screw for Index,	1 00
Small size gas-burning self-regulator, 2 pieces,	23 00
Large do do do do	28 00
Amber Base for Vulcanite,	8 00
Rubber Base do	3 00

Furnaces.

No. 1, Large Furnace, with three muffles, $18 00. Muffles each,	
Boxing and cartage,	1 75
No. 2, Furnace, with three muffles, $16 00. Muffles each,	38
Boxing and cartage,	1 50

Dental Chairs, Rolling Mills, Roberts' Wisdom Teeth Forceps, and all kinds, of the most approved make and style. Excavators, pluggers, plate punchers, etc., etc.

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FROM

Jones & White, and Orum & Armstrong.

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In the mean time I wish to state that I am in the business as a matter OF MUTUAL INTEREST between myself and the Profession, for the purpose of making money as well as glory. I therefore allow no man to undersell me, believing that small profits and quick sales are better than the *old fogy* style. He who doubts may try, and if not satisfied, the money will be *refunded.* I want no one to keep goods purchased of me unless they are in every respect PERFECTLY SATISFACTORY.

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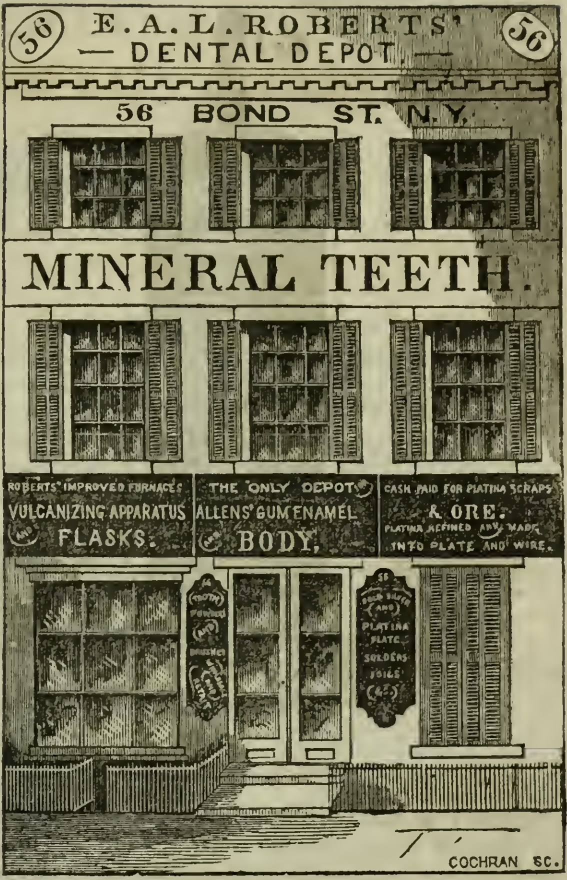
Jones & White, Stockton, Roberts, and Porter.



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Materials for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, " "	1 00
Platina, " "	6 50
Pure gold, " "	1 10

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ROBERTS'	Gum-teeth for plate-work,	$0 15
"	Plain " "	0 8
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"	" " 2 pins,	0 8
"	Blocks or sections for vulcanite base, or cheoplastic work, with pins,	0 20
"	" with holes,	0 15
"	Single gum-teeth for vulcanite work, with long pins,	0 15
"	do do with holes,	0 15
PORTER'S	Gum-teeth for plate-work,	0 16
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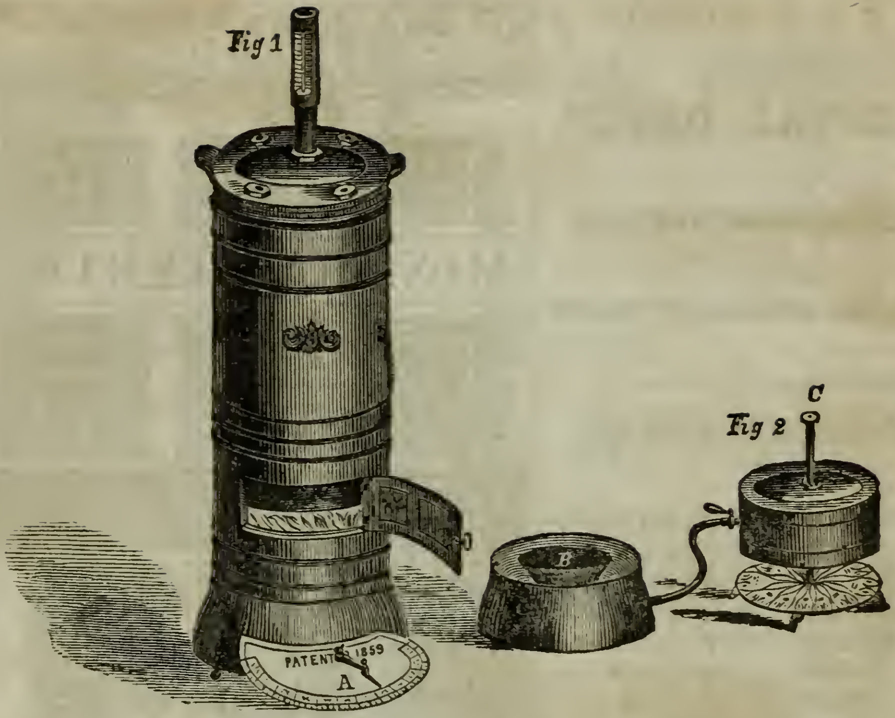
"	Roberts' " 1 pin,	0 8
"	Gum for vulcanizing long pins,	0 16
"	Block " "	0 20



E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top; the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index, as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

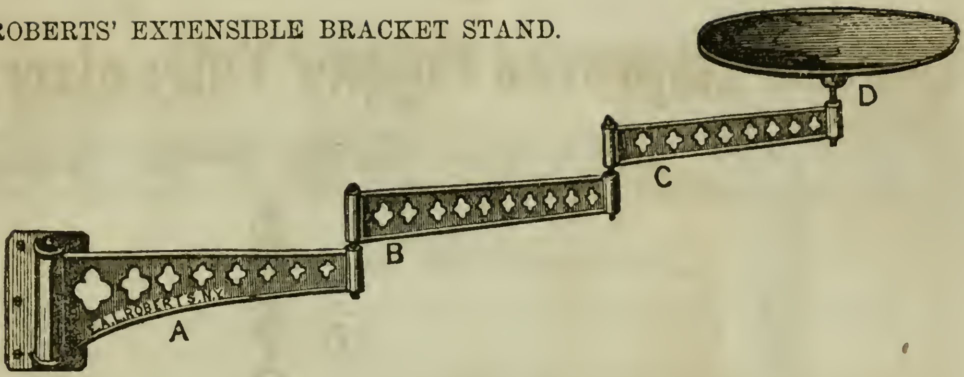
The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

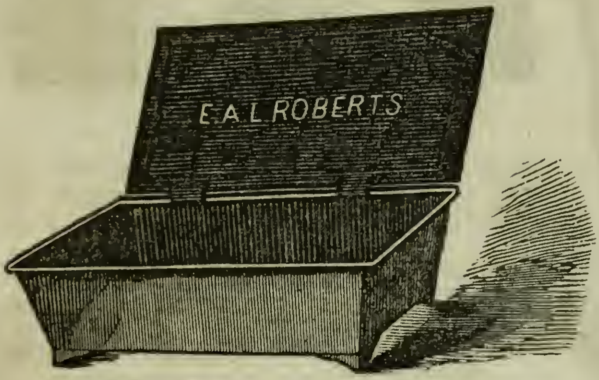
The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

ROBERTS' EXTENSIBLE BRACKET STAND.

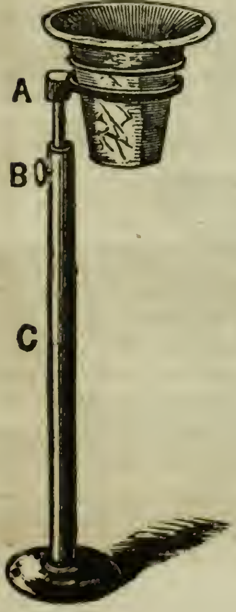


This very convenient stand is made of three segments of ornamented iron, A, B, C (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equally and firmly adjustible to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

IMPROVED MOULDING AND SAND BOX.


E.A.L.ROBERTS.

The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

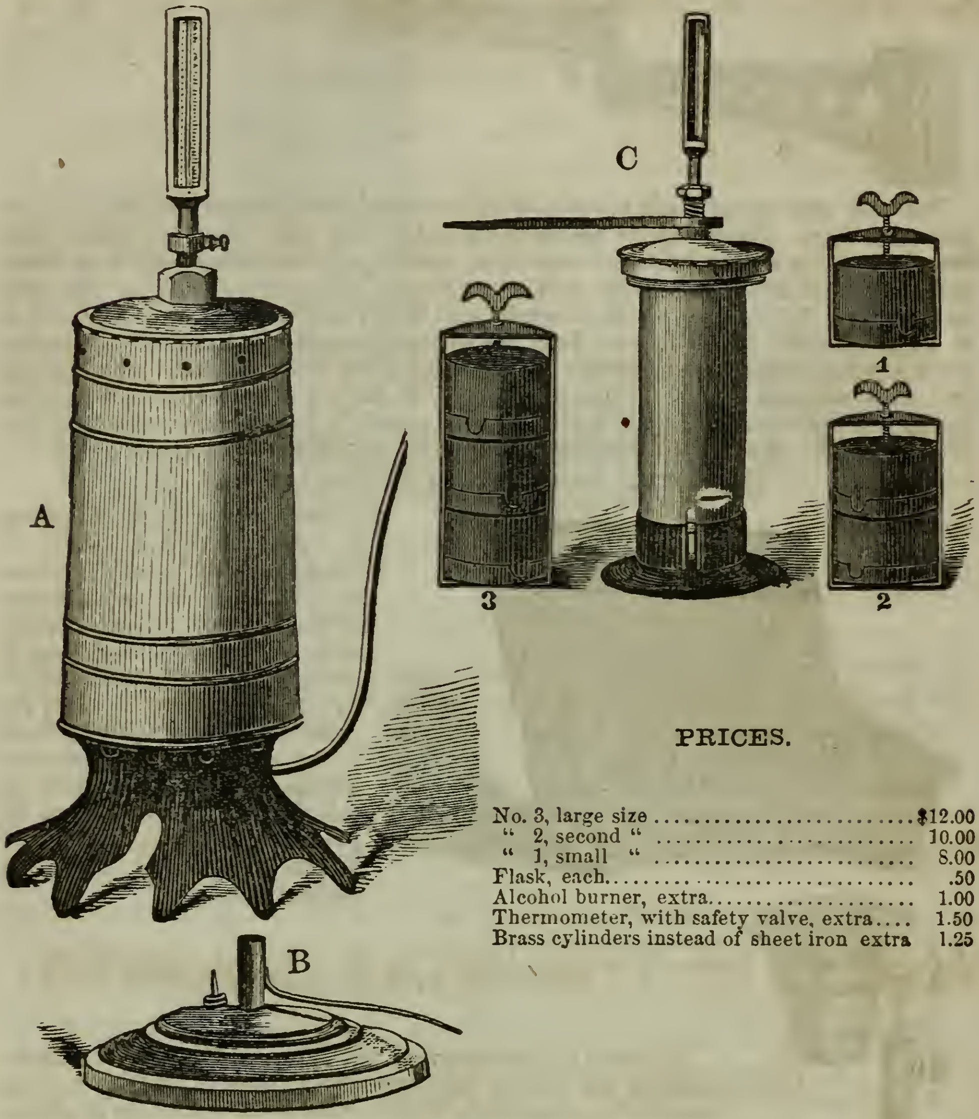
A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

IMPROVED FLASKS, &c.

We now offer an assortment of Flasks, viz.: Hawes', Sectional, and others, moulding rings of all sizes and styles, melting ladles with adjustable handles—an improvement of our own—with a full assortment of furnace and melting tongs.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.



PRICES.

No. 3, large size	$12.00
" 2, second "	10.00
" 1, small "	8.00
Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.50
Brass cylinders instead of sheet iron extra	1.25

These machines are the most compact, light, and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal, dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2, second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

The cover of each machine has a plug of fusible metal screwed into it, which fuses and allows the steam to escape before the pressure reaches one hundred and twenty pounds. This machine, for simplicity, safety and economy, is superior to all others, requiring less than half a pint of alcohol, or if gas is used, one fourth of a burner of ordinary size, to vulcanize.

PATENT VULCANITE

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VULCANITE BASE FOR ARTIFICIAL TEETH.

Hereafter, prices of **Rights, Apparatus,** and **Materials,** will be as follows, viz.:—

For an Office-Right, *without tariff*, ...	$100 00
" " Improved Gas and Alcohol Heater, . .	$16, $20, 5 00
" Best prepared Gum, per lb., ...	3 00
" Improved Flasks, each, ...	35
" Sheet Gutta Percha, for impressions, per lb., . . .	2 00
" Packing Instruments and Scrapers, per doz., . . .	2 00

Other Tools and Materials at reasonable prices.

Those wishing their work Vulcanized at the Agency, can depend upon our

Promptness, Fidelity, and Reasonable Charges.

We have every facility for doing the

WORK IN THE BEST MANNER.

The character of our work is acknowledged to be Superior, and the results

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Those wishing to test the work can set up their

TEETH IN WAX,

On a thin

PLASTER MODEL OF THE MOUTH,

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EDITED BY

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J. H. McQUILLEN, D. D. S., DENTAL LITERATURE AND ART.
G. J. ZIEGLER, M. D., MEDICAL AND GENERAL SCIENCE, IN THEIR RELATIONS TO DENTISTRY.

ASSISTED BY AN ABLE CORPS OF CONTRIBUTORS.

The volume commences with August, and will be continued on the first of each month.

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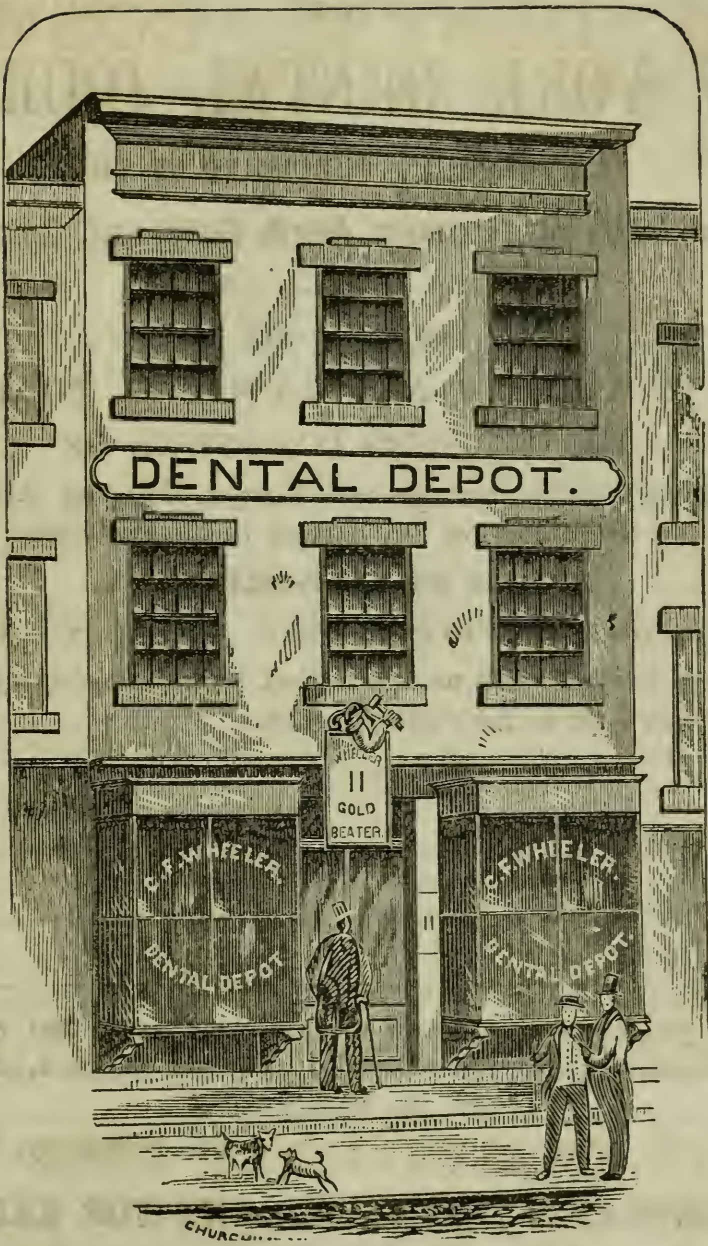

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NEW YORK DENTAL JOURNAL,

A QUARTERLY, PUBLISHED ON THE

First Days of January, April, July, and October.

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W. B. ROBERTS & FRANK H. NORTON.

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the color of which depends upon solar light to be developed, are direct infringements on my patent, No. 24,545, as the following extract will show.

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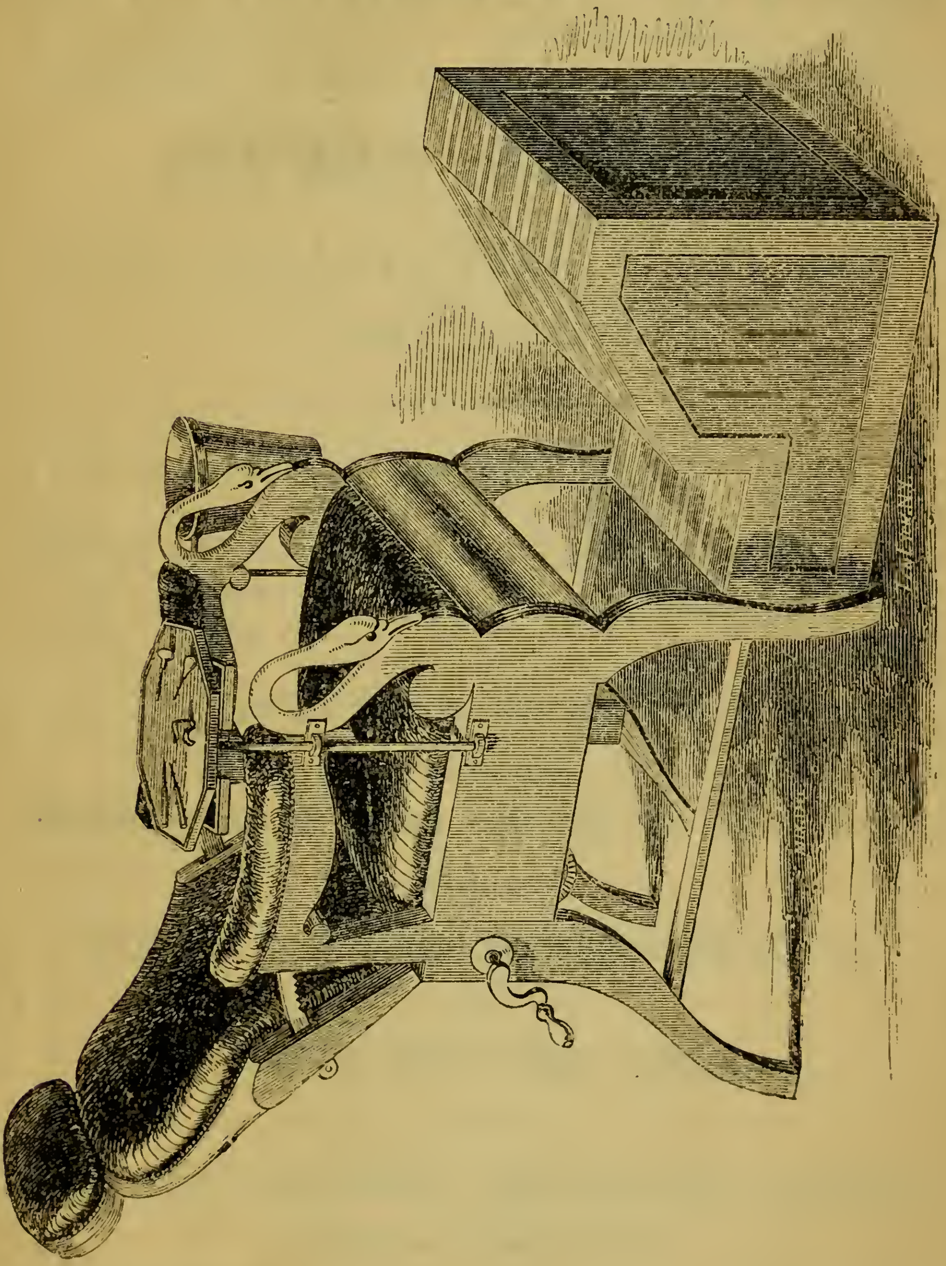

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Vol. 4. No. 4.

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DENTAL JOURNAL.

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OCTOBER, 1861.

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THE

NEW YORK DENTAL JOURNAL.

OCTOBER, 1861.

THE AMERICAN DENTAL CONVENTION.

In our last issue we took occasion to mention the forthcoming meeting of the "American Dental Convention," and to express our hopes that the gathering would prove interesting and satisfactory in every respect, in spite of the complicated nature of the troubles that have separated our profession, in company with every other class of men throughout the land. These hopes have been more than fulfilled, and we have only to direct our readers' attention to the report which we publish in our present number, to show that even this sad and confused period has not annihilated the dental profession, nor obliterated the interest they have always exhibited for the advancement of each other and the cause. All unite in considering this as one of the most interesting meetings we have ever had; and the unanimity of feeling which was prevalent, the absence of all disturbing influences, combine to make it one long to be remembered by all who were present.

Owing to the lateness of our issue, we did not consider it advisable to prepare a special report for the New York Dental Journal, as we have heretofore done, but relied on the able efforts of others, whom we beg to thank for the assistance we have borrowed. Under our editorial head we shall refer to the subject of conventions again, and trust that we shall long be permitted to chronicle the success and continual advancement of the AMERICAN DENTAL CONVENTION.

AMERICAN DENTAL CONVENTION.

THE Convention was called to order on Tuesday morning, August 6, 1861, at 11 o'clock, in the Music Hall, New Haven, Connecticut.

The President, Dr. T. L. Buckingham, in the Chair.

The minutes of the last session were read by the Recording Secretary, Dr. B. W. Franklin ; and after slight amendments were approved.

A discussion relative to the admission of members ensued.

Dr. Rogers, of Utica, N. Y., suggested the issuing of tickets to members by the Treasurer, on payment of their subscriptions, and that only those holding tickets be admitted on the floor.

Dr. Franklin opposed having tickets, and advocated opening the hall free to all who chose to attend. He wished the public, men, women, and children, would come in and fill the galleries, and so be educated in this most important subject.

Dr. Roberts, of New York, moved that all who wish to become members should sign their names on the roll and pay their subscriptions, which motion was carried.

The following gentlemen enrolled their names and residences, also paying the required assessment:

CALIFORNIA.—S. Crossett, North San Juan.

CONNECTICUT.—Saml. Mallett, I. Woodworth, H. J. Stevens, A. B. Smith, J. H. Smith, J. T. Metcalf, New Haven; J. B. Snow, D. H. Porter, H. L. Sage, C. Merritt, Bridgeport; L. Parmele, J. S. McManus, E. E. Crofoot, Hartford ; A. B. Welton, Milford ; A. W. Allen, W. W. Clapp, Norwich; A. Hill, Norwalk; J. A. Pelton, Middletown; T. S. Scranton, Madison.

MAINE.—J. M. Nevins, Bucksport.

MASSACHUSETTS.—J. Beals, Greenfield ; I. J. Wetherbee, Boston ;

W. W. Rice, Great Barrington; W. L. Bowdoin, Salem; Thos. Palmer, Fitchburg; S. G. Henry, Westboro; H. M. Miller, Westfield; F. Searle, Springfield.

New Jersey.—S. J. W. Neal, Camden; C. S. Stockton, Mount Holly.

New York.—T. H. Burras, D. A. Jarvis, W. B. Roberts, A. McIlroy, C. S. Miles, B. W. Franklin, John Allen, A. Jones, W. H. Allen, G. H. Perine, New York City; Geo. E. Hayes, B. T. Whitney, Buffalo; A. N. Priest, L. W. Rogers, Utica; W. B. Heard, W. W. Starr, Brooklyn; S. Mapes, Fishkill; M. Frank, Cortlandt; T. D. Evans, New York Mills; J. C. Smithe, Millerton; H. N. Fenn, Rochester; H. F. Smith, Pine Plains; W. S. Elliott, Sag Harbor; L. W. Sutton, Greenport; A. H. Brockway, Chittenango.

Ohio.—W. H. Atkinson, Chas. Butler, Cleveland.

Pennsylvania.—T. L. Buckingham, S. S. White, J. D. White, Geo. T. Barker, J. L. Asay, A. Merritt Asay, J. R. McCurdy, Philadelphia; James Fleming, Harrisburg.

Vermont.—M. Tefft, West Poultney; J. N. Scranton, Bennington.

The Treasurer, Dr. A. N. Priest, of Utica, N. Y., made his report, which was referred to an Auditing Committee, consisting of Drs. Burras and John Allen, and upon their recommendation was accepted.

Dr. F. Searle, of Springfield, Mass., as one of the Executive Committee, reported that Dr. F. Y. Clark, of Savannah, Ga., having seceded, they had added Dr. B. T. Whitney, of Buffalo, to the Committee.

Dr. Whitney stated that Dr. Clark retained the programme in his possession which had been adopted by the Committee, and not being able to get it, a new one had to be prepared, causing a delay in its issue.

They presented the following report, which was adopted.

ORDER OF BUSINESS.

1. Reading the Minutes of the last Convention.
2. Admission of Members.
3. Report of Officers and Committees.
4. Election of Officers.
5. Retiring President's Address.

6. Introduction of Officers elect.
7. Miscellaneous business.

All essays shall be read to open the discussions on the subjects to which they relate.

No member shall speak more than fifteen minutes, nor more than twice on the same subject without permission.

I. ETIQUETTE.

1. Fraternal relations and courtesies among Dentists and with Physicians.

2. Intercourse with patients and the public, relating to neighboring practitioners and their operations.

II. SURGICAL DENTISTRY.

1. Ulceration of the Deciduous Teeth, its effects upon the growth or health of the permanent ones.

2. Inflammatory diseases of the Gums and Periosteum, producing absorption of the sockets and loosening of the Teeth; causes and treatment.

3. Bleaching Teeth when discolored from loss of vitality; means for preventing their discoloration and ulceration.

4. Filling Teeth and Roots. What is gained by fang filling, and average of success?

5. The various plastic materials for filling Teeth. Their relative or individual merits.

6. Hæmorrhage after extracting Teeth. Treatment.

7. Miscellaneous subjects relating to Surgical Dentistry.

III. MECHANICAL DENTISTRY.

1. Surgical preparation of the mouth for Artificial Dentures. Should the roots of decayed and broken Teeth always be removed?

2. When shall we insert Pivot Teeth.

3. The relative merits of the various materials used as a base for artificial dentures, and the method of mounting them.

4. Miscellaneous subjects relating to Mechanical Dentistry.

IV. UNFINISHED AND MISCELLANEOUS BUSINESS.

N. B.—The Executive Committee suggests that half an hour every morning be devoted to the presentation of models, improvements, and inventions, and the disposal of business not embraced in the regular order.

B. T. Whitney,
F. Searle,
Wm. A. Pease,
Executive Committee.

The Convention proceeded to the election of officers for the present year.

Dr. John Allen, of New York City, was unanimously elected President.

On motion of Dr. Rogers, it was voted that in the afternoon session the members' names be called, and they take their seats on the side of the Hall at the President's left.

Adjourned until three o'clock.

AFTERNOON SESSION.

The President called the meeting to order at three o'clock, and the balloting for officers was resumed, which resulted in the following selection :—

Vice-President.—Dr. J. D. White, of Philadelphia, Pa.
Recording Secretary.—Dr. F. Searle, Springfield, Mass.
Corresponding Secretary.—Dr. B. T. Whitney, Buffalo, N. Y.
Treasurer.—Dr. John T. Metcalf, New Haven, Conn.

The retiring President, Dr. Buckingham, remarked that it was a source of regret to him to state that he had no address prepared to deliver on retiring from the Chair—his excuse was, that, owing to the distracted state of the country, for some time there seemed to be an uncertainty whether or not the present meeting would be held, and since it had been so determined it had been out of his power to prepare one. He was glad the two Secretaries had insisted upon this annual session's taking place, and now felt, from the number present, that his own fears were groundless; indeed, the more that he saw of this Convention, the more he was convinced of its value and its progress. The old American Association, where the whole work was done by a few, and the meetings were so controlled, was a failure; but an institution where all is free and open, with appropriate rules for government, he considered a necessity.

Drs. Rogers and Wetherbee were appointed a committee to conduct the President elect to the Chair. Dr. Rogers said, "It is known that 'republics are ungrateful;' but surely this cannot be true of the American Dental Convention, for they have called the man who stands first in mechanical dentistry in the country to preside over them. I introduce to you Dr. John Allen, of New York."

On taking the Chair, Dr. A. expressed his thanks for the honor conferred, and his wish that it had fallen on some one more capable. He said, since he was there, all he was or could do should be theirs. He had seen many changes in his life, yet none like the one now agitating the country. Still he could not but congratulate the Association upon the present state of the profession and the number in attendance, even considering the absence of many who usually were with us.

The other officers elect came forward and took their seats.

On motion of Dr. Wetherbee, it was voted that a reporter be employed to furnish the discussions for the daily papers published in New Haven. His object, he stated, was to carry this information outside of the dental journals, and, by giving it publicity, thereby acquaint the people with their designs, and interest them in the subject.

On motion of Dr. Hurd, it was voted that the Executive Committee make a report of the order of business and subjects for discussion previous to the final adjournment.

On motion of Dr. Wetherbee, it was voted that Dr. W. Hooker, of the Medical College, and other medical gentlemen of this city, be invited to seats upon this floor.

The President appointed the following as the Executive Committee: Drs. W. H. Atkinson, Cleveland, Ohio; Geo. T. Barker, Philadelphia, Pa.; W. B. Roberts, New York City; I. J. Wetherbee, Boston, Mass.; Samuel Mallett, New Haven, Conn.

Dr. Franklin moved that the several dental journals be furnished with a copy of the Report of the Executive Committee, with the request that they will give said report an insertion in each number during the ensuing year. Adopted.

Dr. Wetherbee moved the appointment of a committee of three to revise the Constitution. After an amendment by Dr. Buckingham, that the committee report before the final adjournment, the motion was carried.

The President called for essays or remarks upon the first subject for discussion, Etiquette, considered—1st, in "Fraternal relations and courtesies among Dentists and with Physicians;" and 2d, in "Intercourse with patients and the public relating to neighboring practitioners and their operations."

Dr. Whitney thought this one of the most important subjects for the consideration of the dentist, and yet it received but little attention even in the dental periodicals of the day. The practical or manipulative department may be found in books, but this could not be so learned. He referred to the difference to-day in the dental profession and what it was twenty years since, when he entered its portals; then each member wore his mantle of secrecy, and what knowledge he possessed was securely locked in his bosom. It was our duty, he thought, to impart all useful information that may tend to the benefit of others. Even as a matter of policy, it is best; for, by a narrow-minded course, we not only lose our own self-respect, but expose ourselves to being considered charlatans and quacks. We also owe much to the medical profession, to whom we have the claim of kindred; and particularly to the medical practitioner do we owe courtesy, and should cultivate with him the most friendly feelings, as there is often a mutual dependence necessary between the two professions.

Dr. Atkinson thought the whole of etiquette was a personal matter, and yet every man of experience knows how sore a point it has always been. Every honest young man who enters the profession, and all are such at their commencement, asks, "What do I owe in respect to my elders?" and justly inquires, "What is etiquette?" Does he always see it in his elders? Do we even know exactly what it is? Does not every individual put his own construction upon it, varying from it according to the influences surrounding him? The golden rule, he considered, was all-sufficient, and is the only sure guide, in all cases; ask yourself the question, when in doubt, would I have others so act to me? The scientific man too often locks what knowledge he has gained in his own breast, and resolves that it shall die with him; but this is not just or right, for we must acknowledge that all we have comes from the great Father for the benefit of the race. Until these general principles are recognized, etiquette is useless. Earnestness also is essential to insure success, and if accompanied with honesty, few would fail. Even an old hardened sinner can be awakened to his condition if approached with simplicity and honesty.

On motion of Dr. Mallett, Dr. Worthington Hooker was invited to address the convention.

Dr. Hooker referred to the pleasant intercourse which existed between the two professions, and the frequent necessity of meeting each other in consultation; indeed he had that day been engaged with Dr. Mallett, in the administration of ether as an anæsthetic. He did not consider the golden rule would in all cases answer in this matter of etiquette, but believed that errors were often made from misconception in both professions. He would instance such a case: A patient may present himself to the physician, suffering from neuralgia. Medical men, as a class, are too apt to ignore the influence which the teeth may exert, and will probably say the disease is due to some other cause. If, subsequently, the dentist is visited, he will probably say that the decayed teeth are the cause. In this expression of opinion the dentist does wrong, for he should first ascertain whether a physician has been consulted, and then advise with him; and the same rule should be observed on the part of the physician. In this way a pleasant and high-toned intercourse will be observed, and the rights of both be maintained. Mere thoughtlessness was too often attributed to a want of courtesy. Much harm was done by men in all professions who profess to know every thing, and yet expose nothing but their ignorance. He went to such a one in dental practice some time since, who perfectly flooded him with knowledge, and protesting he could determine the effect of ether upon any person at sight; he would not be understood, however, as being opposed to knowledge, but would have all know as much as possible; but let us not forget that others may be as well informed as ourselves. Dr. H., at the request of the Convention, gave at some length his views upon the proper exhibition of ether, and considered that for dental practice it was not necessary to produce total insensibility, but believed there was a period when partial anæsthesia is induced in which sensation is lost without a loss of consciousness.

Dr. Wetherbee said medical men often felt regret at the expression of opinion by dentists on diseases which did not belong to the dental profession; thus presenting two conflicting judgments to patients, often tending to the disadvantage of both parties. We ought not to be jealous of each other; but a relationship should exist, which should be firmly cemented with a just acknowledgment of the rights of both. He longed for the time when dentistry would be more fully acknowledged as a twin sister of the medical profession. They have claims upon us, and we upon them, which cannot be thrown aside; but we must first make it apparent to the community as well as to other professions, that we are masters of our art. In our judgments of the work of other practitioners, let us be guided by the highest sense of justice and honor. In many cases he considered silence the better part of valor, as there are often circumstances over which the operator can have no control, which may affect the quality of the work; if we thoughtlessly pass condemnation, we also may be condemned by others for the same failings. He thought, however, when teeth came under notice that had been destroyed by amalgam, osteoplastic, or other base materials, we should, without referring to the operator, advise the patient to have them removed, and for the future avoid their use, stating our reasons for such a judgment. Dr. W. alluded to several cases in which he had consulted with physicians; their intercourse terminating with the pleasantest results, and had ever found them ready to impart information to the honest inquirer.

On motion, adjourned to meet on Wednesday morning at half-past nine o'clock.

SECOND DAY—MORNING SESSION.

The minutes of previous day were read and approved.

The following communication was received and read :—

College of Dentists, England, 5 Cavendish
Square, London, July 9, 1861.

To Prof. T. L. Buckingham :

Dear Sir :—The subject of the proposed "World's Dental Convention" has been brought under the notice of the Council of this College, and we are requested to communicate to you, as President of the American Dental Convention for the current year, that in the event of the General Convention being held in London during the Great International Exhibition of 1862, the College of Dentistry will deem it an honor to welcome their professional brethren from America, whose enlightened labors have tended so much to secure for the profession of dental surgery a distinguished scientific position in their own country, and have proved a noble example to the dentists of other countries.

The Council had hoped that the College of Dentists might be made available for the great meetings of the Convention, but inasmuch as the profession in England is so divided, it appears desirable that *neutral ground* should be chosen for this purpose; thus both sections of English dentists might unite to welcome their brethren from distant lands.

We have the honor to remain, dear sir, with much respect, your faithful servants.

(Signed) George Waite, M. R. E. S., *Pres.*
Samuel Lee Rymer, } *Hon. Secretaries.*
Anthony Hockley, }

On motion of Dr. Franklin, it was accepted and ordered to be incorporated in the minutes of the meeting.

On motion, a committee was appointed, consisting of Drs. Buckingham, Wetherbee, and McIlroy, to take into consideration the letter, advise any action they may think expedient, and report at to-morrow's session.

The discussion on "Professional Etiquette" was resumed.

Dr. Hurd, of Brooklyn, fully approved of what had been said yesterday, and believed all had no doubt been profited, but considered we had but crossed the threshold, as the subject was both extensive and far reaching, even beyond the precincts of our profession and that of the physician. It required us often to descend from our lofty eminences and consult with those we may consider our inferiors; but who of us had not imperfections? and even a bungler should receive consideration if he is honestly striving to elevate himself—then it is he is entitled to the respect of every member of the profession. True etiquette goes even further, and requires silence upon others' faults, even when justice would seem to demand an exposure; it prevents those significant winks and nods, which often convey so much, and all public criticism upon a brother's *writing or spelling.* Selfishness and envy must be thrown aside before we can hope to attain perfection. I had rather, said he, bless my own soul by a good act toward an enemy than do him injustice by an ill-natured remark.

Dr. Searle referred to the time, which was not far distant, when medical men looked upon dentists as mere mechanical operators, and therefore denied them confidence and respect. But now, those men are passing from the field of action, and a younger and more liberal class are taking their positions; upon these we can exert an influence for good which will result in a mutual benefit. Particularly upon the diseases of the teeth can we give them instruction, and he had always found that it had been kindly and generously received. He would, however, have dentists know and assert their rights, and where this was done it would be beneficial to both patients and medical practitioners.

The President, Dr. Allen, requested Dr. White to take the Chair, and proceeded to read a paper upon

CAUSES WHICH RETARD DENTAL PROGRESS.

"For more than two thousand years dentistry has been gradually advancing, though slowly, yet more and more rapidly as its progress with the march of time has been onward. There may be those who will note the present era as the time when dental surgery reached its ultimatum. So thought many of our predecessors in years gone by; but the future historian will doubtless look back upon the year eighteen hundred and sixty-one as forming only a connecting link between the past and the future, and that a still brighter period in our profession will mark the page of history. The rapid advancement of dental science within the last thirty years, is only an index of what is to come. The facilities now afforded for acquiring a thorough dental education through the instrumentality of numerous well-qualified private preceptors, together with the dental colleges, dental associations, and dental literature, in this country and in Europe, all point with peculiar significance to a brighter future. The march of improvement is still onward; the sun of science continues to shed its genial rays upon our profession, and to develop more perfectly the principles upon which it is based. But still, with all these advantages, and all that has been done to bring dental surgery forward to its present stand-point, much remains yet to be accomplished.

"We deem it proper, therefore, to notice some of the causes which retard our onward progress. There are many who never venture out of the old beaten track of their predecessors; they will acquire, perhaps, the same degree of skill, go as far as others have gone, but no farther. They, however, nobly sustain the profession as they find it, and their valuable services have done much to ameliorate the condition of those who were so fortunate as to fall into their hands, and many of their operations will stand as truthful records of their memory, long after they shall have gone to their last home. If these worthies would venture onward to some unbeaten track, their sphere of usefulness might still be enlarged, for in their reconnoitring they might, perchance, discover some new principle or improved method of accomplishing what is already known, and thus add to the common stock of dental science; but they decline doing this, and rest upon the laurels already won by others.

"Another cause that prevents advancement rests with those who venture on a little way and then turn back before their point is gained, having reached only the conclusion that, if it were possible to accomplish the object had in view, it would long since have been done by some one else. Suppose Harvey had reasoned thus when he commenced his investigations with reference to the circulation of the blood. If he had, the world might yet have been in darkness upon the subject.

"Suppose Columbus, after having made a voyage or two in pursuance of his favorite theory, had failed to discover this continent (which to others then seemed to exist only in his brain), and had abandoned his object as hopeless; he would not then have been the means of shaping the destiny of millions of our race, who are now enjoying the benefits of his conceptions, his energy, and perseverance.

"If Fulton had listened to the advice of friends, whose minds were not enlightened like his upon the subject of steam-power, he never would have developed that great principle which has revolutionized the commerce of the world. But he saw in his mind's eye the engine working, the steamboat moving, the benefits germinating, which would redound to his honor and to the prosperity of nations yet unborn. That which he saw only within the small compass of his brain, we can now see in the forms of steamships, steam-cars, steam-mills, steam-factories, of such gigantic proportions as to fill the mind with awe, wonder, and surprise.

"We might dwell with interest upon the thousands of inventions and improvements that mark the progress of science and civilization, all of which first originated in thought, then dwelt in the secret chambers of the human brain, where they were modelled and perhaps already working in the spirit of man, long before they were clothed with a body and developed in practical forms.

"These examples show us the great importance of vigilance and perseverance also in our profession. Again, it is thought by many that our profession is not sufficiently remunerative to justify much expenditure of time and money, in the preparation and pursuit of dental practice. This feeling begets apathy, which retards our progress. Apathy should not find a lodgement among us, for two reasons: one, because our own prosperity requires constant vigilance; the other, because the community in which we live claim our best services. But, says one, I have to compete with very incompetent men, who charge but half-price for their services, and I must meet them on their own ground. Not so: this is the wrong ground to occupy; it is far better to avoid those low competitors, by keeping off their platform. Seek a higher level; the most effectual means of putting down empiricism is to soar above it, and help others up rather than lower yourself. This position will command a practice both lucrative and honorable, for the public are not so dull of perception as to be unable to discriminate between the true professional man and the one devoid of the essential requisites that characterize a well-qualified practitioner, who calls to his aid all those fundamental principles and collateral branches which eminently qualify him for the discharge of his professional duties. To this end, he seeks the aid of physiology, which teaches him the functions of the different parts of the human system; of anatomy, which unfolds to him the situation, structure, and economy of the animal body; of pathology, which explains to him the nature of diseases, their causes and symptoms; of therapeutics, which guide him to those curative agents that assist nature in restoring health when attacked by disease. These, together with chemistry, mineralogy, metallurgy, and other minor auxiliaries, which are acquired by experience in manipulations, illuminate the mind thus disciplined, and its genial rays, reflected upon other minds, dispel the darkness which the empiric leaves in his train; and thus the public can readily distinguish between the man of science and the mere pretender, and will bestow patronage accordingly.

"There is another class of dentists who do but little toward furthering our course, although they are good practitioners, profess strong powers of perception, can see defects still in the dental art that ought to be overcome, but are unwilling to incur the necessary expense and time that may be required to produce the desired results. They are unwilling to prosecute investigations in the dark labyrinth that lies before them, without the hope of reward. . We trust the time is not far distant when acceptable provisions will be made by means of which this obstruction will be removed, and all others that tend to impede our progress. Let every one feel that he can do something, that there is yet room for him to make his mark, and then much will be accomplished. Bear in mind, that men's acts live after they shall have passed away; and may some lasting good result from the part we have taken in this life."

The subject of "Professional Etiquette" was resumed.

Dr. Jarvis considered the subject of fundamental importance, and would be glad if we could lay down some rule by which our actions might be governed in all cases. The golden rule is one of great beauty, but thought there were circumstances in which it would not apply. It might be thought preposterous to think of superseding it, but would prefer to adopt the following: First, Kindness, uniform and never to be forgotten. Second, Justice, though the heavens fall. He would instance a case where the golden rule should be laid aside for these. A person consults a physician as to the cause of pain in a tooth which has been previously filled; he expresses his opinion by stating that the pain is due to the filling; if, when the dentist sees the case, finding the filling perfect, that the pain is the result of a bruise, he would ask, if we should apply the golden rule, would say no! If there be blame, and justice to others requires us to show it, he would never hesitate to do so, accompanying it with all kindness, but yet with justice as a requirement of the profession.

Dr. Stockton passed a high eulogium upon the kindness he had received from the elder members of the dental profession.

On motion, the next subject for discussion was taken up, being "Ulceration of the Deciduous Teeth, its effects upon the growth or health of the permanent ones."

Dr. J. D. White remarked that he supposed the question referred to the effect of ulcerated roots, and would answer, that he should not always consider them injurious. It is true that by the early loss of the temporary an indirect influence may be exerted upon the permanent teeth. He considered the judgment of the operator could be the only guide for the treatment, as, if the ulceration is extensive, it may do injury to the permanent, but if not so, thought no harm would result. The presence of the deciduous teeth is of the greatest necessity for the perfect development of the permanent set, and never extracts such teeth, except upon the direst necessity. It is the great fault of operators to yield too readily to the importunities of parents in removing such teeth—indeed it seemed to be an almost American trait to be anxious to get rid of the temporary teeth ; as a consequence we meet constantly with contracted maxillary arches, particularly of the superior jaw, the result of this meddling. He had been censured for this course, but believed it to be the true one, as the disease to these teeth will often pass off, leaving them to perform their natural functions in the animal economy. The old practice, viz., that of the removal of all diseased teeth, both permanent and deciduous, he had seen the folly of; indeed had often cut off the ulcerated roots of the deciduous teeth, where they had been pressed from their sockets, causing irritation to the cheek, being held in by a small portion of gum, embracing the neck of the tooth ; and remarked that all were doubtless aware the process of absorption of the fangs was arrested when they were thus ulcerated.

Dr. Atkinson agreed with Dr. White, that we often distort the faces of the dear children by our haste to interfere where "an angel would not dare to tread." We should have a higher conception of molecular action, and should study more closely the influences governing absorption of the fangs of the temporary teeth. He knew that we extract too many deciduous teeth, while with our own children we search out the cavities of decay and fill them. If we allow these teeth to disintegrate and be lost before the permanent ones are ready to take their place, there will be a lack of development, for the necessary molecules cannot be deposited unless there is the requisite amount of circulation. He described ulceration to be merely the effort of nature to remove the broken-down and disintegrated tissue about the apex of the fang, and thought Dr. White's method of amputating such fangs, when possible, as correct practice.

Dr. Butler considered amputation of roots quite as practicable as that of a finger. It would be well to examine and see to what ulceration is due; it is usually the result of the death of the pulp, and this we should prevent, when possible, by filling deciduous teeth. He had, on several occasions, cut off the palatine fang of permanent molar teeth, and such have been retained and performed good service.

Dr. Wetherbee referred to parents bringing their children, with the desire that certain teeth should be extracted; he would advise them against such action; they would frequently go away, but again return, begging him to operate; in such cases he would peremptorily refuse, considering it the worst of malpractice. We should not fail to explain to the parent, and enlighten them as to our reasons. He usually recommends, for the removal of the fetid condition of such teeth, a daily syringing, sometimes with creosote, more frequently with paregoric; has also treated such teeth and filled them successfully.

Dr. Priest spoke of the necessity of filling the deciduous teeth, and thought it our duty to educate parents as to its importance.

Dr. Woolworth agreed with Dr. Priest, and had noticed where the deciduous teeth were extracted early, the permanent ones would also come through too soon.

Dr. Buckingham said that ulceration was only one of the effects of inflammation, but considered that the influence exerted would depend very much upon the general health of the child; in a perfectly healthy one, no bad results would follow, but with the reverse, such systematic disturbances may be exerted, that it would be necessary to extract the tooth; therefore the judgment of the operator could be the only guide. The circulation and nutrition of the permanent and that of the deciduous teeth were so independent, that he considered (except in rare cases) no local influence could be exerted upon the former by the ulceration of the temporary teeth.

Dr. Atkinson drew a diagram, and gave a lengthy and interesting description of the formation of an alveolar abcess; he would, under some circumstances, extract ulcerated deciduous teeth, when occurring at an early stage, when the permanent ones were in a soluble condition; considered such cases rare. In one case could recall, where ptyalism was induced in a child until sloughing of the process containing the deciduous teeth took place, and yet the person eventually had a good set of teeth. Dr. A. was asked and answered several questions on this subject.

Dr. White, in reply to a question, as under what circumstances he would extract deciduous teeth, said that individual cases prove nothing, but we must form our judgment from the great aggregate of practice. No surgeon, let the description of the case be ever so minute, would venture upon a prognosis without seeing the patient; and this answer he would make to the question; he must see the patient, or he could tell nothing. It was impossible to put on paper just what you would do in all cases; could only say, would extract the diseased deciduous ones when he felt they were damaging the permanent set; would refer to the importance of taking notes of every thing that occurred in practice; particularly should this be observed by young practitioners. Many things were to be taken into consideration before determining to extract, and where the general health seemed to be suffering, we should call in consultation a medical adviser.

Dr. Roberts would ask Dr. White, what proportion of teeth he extracts for children where he fears the permanent ones will be affected?

Dr. White seldom extracts for the effect upon the permanent set, but usually from the influence exerted upon the general health. Has seen much injury done by early extraction, but had charity to think the children might have been suffering from constitutional disturbances;

but thought, if the permanent tooth is laid bare by early extraction, when the enamel is not dense and will absorb the fluids of the mouth, injury must follow.

The discussion, which was of an interesting character, though confined much to questions and answers, was continued at some length, being participated in by Drs. Franklin, Whitney, Palmer and others. Drs. Wetherbee, Whitney, and Rogers were appointed a committee to revise the Constitution.

Communications were received from Dr. Charles Hooker, inviting the Convention to visit the medical institution of Yale College; also from Mr. Herrick, extending an invitation to the members to visit the Trumbull Gallery, Museum, and the various college buildings.

On motion, the thanks of the Convention were tendered to these gentlemen, and the Secretary was instructed to communicate the same.

Adjourned to meet at three o'clock.

SECOND DAY—AFTERNOON SESSION.

The President called the Convention to order at three o'clock.

On motion, the second subject in "Surgical Dentistry" was passed over, and the third—"Bleaching Teeth, when discolored from loss of vitality; means for preventing their discoloration and ulceration"—was taken up for discussion.

Dr. J. D. White considered the term "dead tooth" an erroneous one, as, even when the pulp dies, the periosteum still performs its limited functions of nutrition; but this error of language was due to the fact of the deficiency of a good dental nomenclature. The discoloration seen in teeth, after the death of the pulp, is usually attributed to the breaking up of the red corpuscles of the blood, the hæmatine or coloring principle of the same permeating and becoming lodged in the tubular structure of the dentine. This he considered was not the cause, but thought it due to an absorption of the fluids of the mouth. Again, teeth will not discolor after they have been removed from the mouth. A blow or other injury will discolor a tooth; and, indeed, had seen teeth with live pulps that presented the red appearance. Why this was so he could not tell. A tooth may also become discolored by an inflammation of the pulp before its death. As to the bleaching of teeth, each one had his favorite method: he would only refer to one which had been spoken of in one of the recent dental journals, viz., Labarraque's solution; this he thought very deleterious, as a tooth immersed in it for twenty-four hours, though turned white, has its normal structure completely destroyed, and would rapidly discolor in the mouth.

Dr. Barker regretted that he could not agree in all Dr. W. had said, that the coloration was not due to the permeation of the disintegrated red corpuscles; because teeth are not discolored out of the mouth after removal. In a healthy tooth, with a living pulp, the tubuli of the dentine are filled with the liquor sanguinis of the blood, which conveys to those tissues the materials necessary for their proper nutrition; this circulation is due to the ever-present action of exosmose and endosmose, and these continue after the death and disintegration of the pulp; and the broken-down red corpuscles, which previously were too large to pass into the open-mouthed dental tubuli, may now by endosmodic action enter, thus inducing discoloration; but after removal from the mouth, this action would cease. In bleaching, the first duty should be to bring the tooth to as healthy a condition as possible, before attempting to restore the color. That teeth may be nearly restored to a natural color he did not doubt, as the experiment had been tried on one of his own teeth, which had been discolored for four years, accompanied with a slight chronic periodontitis; his friend, after removing the gold filling in the pulp cavity, treated the tooth and restored it to a good color by using a preparation of prepared chalk and chloride of lime, introducing it each day.

Dr. Atkinson said that the subject of bleaching required a vast deal of knowledge of the laws of chemical equivalency. Color is not an entity, but an arrested fractional part of light. To bleach a tooth, the whole decayed mass, hard or soft, must be removed. Chlorine is the great bleaching agent, and when used, it must be so combined as to produce its least deleterious effects. For this purpose he used the *un-deliquesced* chloride of zinc, crowded into the cavity of the tooth.

Dr. Barker asked Dr. A. if chloride of zinc was a bleaching agent, or had such properties.

Dr. Atkinson replied that he was misunderstood; that he expressly stated that chlorine was the bleaching agent; and that the chloride of zinc, when introduced into the tooth, *undeliquesced*, absorbed water from the mouth, becoming liquid, and thereby the chlorine was liberated to effect its bleaching.

On motion, Prof. G. F. Barker was requested to give his views on the chemistry of the subject of bleaching. He stated that while it is true that chlorine is the great bleacher, it is quite doubtful whether this action is due to the chlorine itself, since it will not bleach except in the presence of moisture. In this case, where water is present, the chlorine unites with the hydrogen, setting free the oxygen, which in a nascent state—as ozone, perhaps—effects the bleaching. Moreover, the active agent in both the chlorides of lime and soda (the last Labarraque's solution) is not chlorine, as such, but hypochlorous acid, which acid is set free from combination by any other acid, even the carbonic from the atmosphere. In the chloride of zinc—which is a *binary* compound while the others named are *ternary*—no such action can take place. And he contended that the simple deliquescence of this salt—its passage from a solid to a liquid state—could not, in the nature of things, decompose the salt and set free the chlorine for bleaching. "This is not my opinion," he concluded, "but the fact. I have no *opinion* on the subject."

Dr. Butler asked to what the influence of chloride of zinc was owing, as he had noticed its beneficial effects in whitening teeth.

Prof. Barker replied, that whatever virtue there was in this substance to whiten, was due rather to the salt as a whole, than to either of its constituents. His impression was, that it acted physically in presenting a white ground in the tooth, and perhaps assisted to soften and remove animal and coloring matters.

Dr. Hayes said, that after trying all the so-called "bleachers" he had returned to the old practice of scraping the decayed and discolored bone from the pulp cavity and canal as much as possible, and then filling solidly with gold, and obtaining good results.

Dr. Wetherbee had for ten years discarded bleaching agents in the treatment of discolored teeth. He first removed all foreign matter in the pulp chamber, and then thoroughly scrapes the inside of the fang, cutting away all dead bone, and then fills the tooth solidly with gold. Teeth well filled will often return to a nearly natural color.

A discussion took place between Drs. Wetherbee and Atkinson as to the anatomical structure of the tooth, and the existence of cementum in its interior. Dr. A. contended there was no internal cementum, but only an exterior, covering the fang above the neck of the tooth; while Dr. Wetherbee cited Fox and Hunter to prove that it was also found internally, acting as a cushion to the dental pulp.

Dr. J. D. White stated that from drawings made from actual specimens when he was microscopist to the old American Dental Society, the structure of a central incisor was bivalvular, resembling a clam; there being two thin plates of enamel lined with dentine, having a membrane on its interior surface, and a large cavity filled with pulp. There is a crack along the cutting edge of every tooth. To prove that this was not accidental, he examined teeth before their protrusion through the gum and found it true of these.

The tooth from which the microscopical specimen was taken was from a dead subject; it being one that had never passed through the gum.

Dr. Barker said he would like to refer to the subject of internal cementum, which had called forth remarks from Drs. Wetherbee and Atkinson. He would commence by drawing a diagram of a tooth, showing the three different tissues, as described by the best physiologists and microscopists of the day, and would ask why dentine or enamel could not be denominated cementum? and would answer by stating that, first, each one of these differed in the quantity of organic and inorganic material; second, they each were differently constructed anatomically and physiologically, also presenting quite opposite appearances under the field of the microscope. Cementum has been justly denominated tooth-bone, as it nearly approaches in structure true osseous tissue. If a section of bone be examined with the microscope, we see what are denominated Haversian canals, with branching canaliculi and lacunæ—their use being to convey nutrition to the part which is always extra-vascular—and if a section of cementum be used, we shall see but a modification of this structure, and would ask if any one had ever seen such an appearance from an internal section of a tooth, and doubted if such could ever be obtained. Secondary or osteo-dentine under the microscope will present none of these characteristics.

Dr. Wetherbee said, he would refer Dr. Barker to the works of Drs. Fox and Hunter to prove the existence of internal cementum.

Dr. Barker replied that he would refer Dr. W. to the works of John Tomes, who commenced his investigations where the others ended.

Dr. White stated that the best practice to whiten the teeth was to open and thoroughly clean them, keeping them dry and open to the air and light. This would be better than bleaching, as he had known injury to result from the use of chemicals.

Dr. Palmer had abandoned bleaching agents, but cleaned out the tooth well, and if very much discolored, took out all tissue that was disintegrated, then put in some white lint or flax, and filled it solidly with gold, and thus gets a good color.

The Committee on Constitution made a report, through their chairman, which was adopted, and the committee thanked for their promptness.

We quote only the following from the Constitution:—

"Art. 8. Any dentist may become a member of this Convention on the conditions herein mentioned, unless objection is made, in which case he may be excluded by a vote of the Convention.

"Art. 9. Honorary members may be admitted by a special vote of the Convention."

Adjourned to meet on Thursday at 9 A. M.

THIRD DAY—MORNING SESSION.

The Convention assembled and considered various dental inventions for an hour.

Dr. Franklin presented to notice a new style of vulcanite teeth, invented and manufactured by Mr. S. S. White, of Philadelphia. The peculiarity consists in having a protuberance moulded upon the block, to assist the pins in retaining the teeth in position in the rubber base.

He also exhibited an improved vulcanizer, with a fusible metal gauge of his own invention.

Drs. Hays and Whitney also presented their own improvements in vulcanizers.

The committee to whom was referred the London communication made a report, which, after considerable discussion, was recommitted—Drs. Hays, Rogers, and Franklin being added to the committee.

On motion of Dr. Roberts, the Convention went into ballot to select the next place of meeting. After a long time spent in deliberation, Trenton Falls, New York, was determined upon, the Convention to assemble there on the second Tuesday in August, 1862.

The Executive Committee reported the following as the order of business for the next meeting:—

1st. Admission of members.
2d. Reading Minutes of the last Convention.
3d. Report of Officers and Committees.
4th. Election of Officers.
5th. Retiring President's Address.
6th. Induction of Officers.

All essays shall be read to open the discussion on the subjects to which they relate.

No member shall speak more than ten minutes, nor more than twice on the same subject without permission.

I. MISCELLANEOUS SUBJECTS.

1. Anæsthetics. Their use and relative value.
2. Alveolar abscess.
3. The causes influencing an abnormal development of the teeth.

II. OPERATIVE DENTISTRY.

1. Filling Teeth. Simple and complicated cavities.
2. The dental Pulp. Its varied treatment.
3. The Extraction of Teeth.

III. MECHANICAL DENTISTRY.

1. Artificial Dentures, temporary and permanent.

IV. UNFINISHED BUSINESS.

N. B.—The Executive Committee suggest that half an hour every morning be devoted to the presentation of models, improvements, and inventions, and the disposal of business not embodied in the regular order.

On motion, Dr. Atkinson was requested to read his essays, which he proceeded to do—the first one being entitled "What lack I yet?" second, "Life."

Adjourned to meet at three o'clock.

THIRD DAY—AFTERNOON SESSION.

The President called the Convention to order at three o'clock.

An invitation was received from Professor B. Silliman, Jr., for the gentlemen of the Convention to visit the buildings and laboratory of the Sheffield Scientific School. Accepted, and the thanks of the Convention returned.

Dr. Perine moved that before the meeting adjourned, a certain time be allotted to discuss the propriety of appointing dentists in the army and navy.

The next subject in order—"Filling Teeth and Roots; what is gained by fang filling, and average of success"—was then taken up for discussion.

Dr. Asay described the method employed by him, differing not materially from the usual one.

On motion, the time for each speaker was reduced to ten minutes.

Dr. J. D. White, in answer to the question as to what is gained by fang filling, said that we gain a great deal, in so far as metal well packed will shut out the gases and fluids which decompose and injure the structure of the teeth, also closing a cavity that may become filled with pus. The assertion that the pulp cavity is empty after the destruction and removal of the pulp, is erroneous; this can be proven by the use of a silver probe, which will always be blackened. Again we see the frequent discoloration of the whole body of the tooth. Softening of the tooth structures takes place in all cases after the removal of the pulp, but this is much greater when the fangs are left unfilled. Does not fill immediately after the pulp has been extirpated, but waits until anastomosis takes place between the divided blood-vessels of the pulp and those of the periosteum, then plugs up the root and crown tightly. Regarded it best so to fill fangs that it may be removed in case of trouble, allowing the proper treatment to be extended. Dr. W. also gave his method of treatment of alveolar abscess.

Dr. Barker said that, in considering this subject, he would take, for an example, a tooth where the pulp had been destroyed and removed, and would ask, what would be the nature of the inflammation that would ensue at the apex of the fang, and might not the higher grades be induced, which could not be properly treated if the tooth was immediately filled? His custom was to fill with cotton, leaving it for one week after the extirpation of the pulp.

Dr. Wetherbee thought fang filling the most important work, as it was the best evidence of the ability of the dentist. He would take issue with the last speaker, as to the propriety of not filling immediately. His own practice was to remove the pulp, and having secured the cessation of bleeding by applying creosote, fills at once, and would not be hired to delay it for a single day. Success had taught him that his method was correct, for in no case, during the past ten years, had he seen a single unfavorable case, but had seen bad results where the tooth had been left after the removal of the pulp. Referred to several interesting cases in his own practice showing the advantage of immediate filling.

Dr. Perine considered that to obtain success we must adopt an eclectic practice. Every one, no matter what his capabilities may be, must, in a certain number of cases, meet with failures. He referred to a case where he had treated two teeth, which, after a short time, proved unsuccessful; he removed the fillings, treated the teeth and then filled, but with the same result. Our register may state success after success, but we have no means of knowing how many unfavorable cases fall into the hands of other practitioners; they lost far more than they were aware of, even where the teeth were well filled.

Dr. Roberts believed when a tooth is diseased, the result of the death of the pulp, it will always remain so, and though it may remain for a long time in the mouth, there will always be more or less soreness felt in it, not enough, perhaps, to annoy the patient, but yet an unnatural feeling. After destroying and removing the pulp, when we fill the fangs, it should be done solidly to the apex; but in the vast majority of cases, we fail to do this, even where we honestly think we do it; particularly is this so in the molar teeth. The manner of filling in many cases must be varied, as certain circumstances and conditions of the patient must be taken into consideration. We may hammer and work at some teeth as much as we like without causing the least disturbance, but in others the most gentle treatment will produce unpleasant results. He did not believe every tooth could be saved, and thought the best operators may fail, from circumstances beyond their control.

Dr. Tefft related a case of fang filling in his own practice; he would ask Dr. White if those having vitiated constitutions were not the hardest patients to treat. Dr. W. replied, that he was always governed by the diathesis and temperament of his patient, and had some for whom he extracts teeth immediately on the exposure of the pulp.

Dr. Metcalf referred to an interesting case that terminated in ulceration of a malignant type; he extracted the tooth with the socket attached. He attempted also to treat an exposed pulp in another tooth, but the same result supervening, he of course failed. The patient was of a scrofulous diathesis.

Dr. Franklin said, the failures which are reported are not unfrequently the result of a misunderstanding of the case by the operator; in his opinion, if a definite line of practice was pursued, we could obtain more nearly constant results.

Dr. Atkinson gave, at considerable length, his view as to the change which takes place at the apex of the fang after the pulp has been extirpated, illustrating them by means of a diagram. He thought there was a misapprehension in the minds of many, and that we often go farther than we should, thinking we know more than we do. Thought, if there was no inflammation about the fang, it could be filled immediately—first extirpate the pulp, cleaning out well the pulp cavity, and then proceed to fill. If alveolar abscess is induced, don't take out the filling, if it is a good one, but treat it from the outside, by drilling through the process.

Dr. Searle said, we often had to be governed by the circumstances of the patient, as many of his own came from the country, and he could not see them frequently. In cases where he opens into a tooth with a dead pulp, he dares not fill immediately, particularly if he cannot control the case; therefore puts in a test filling, and tells the patient in case of trouble to visit the nearest intelligent practitioner, and let him see the case. He never dares to fill a tooth so that he cannot remove the fang filling in case of inflammation; also prefers to open into the pulp chamber from the palatine surface of front teeth, in preference to opening through the cavity of decay.

Dr. White explained his manner of rolling a piece of gold, so as to be easily introduced and removed from the fangs of teeth.

Dr. Burras read a paper on "Mastication and Articulation of Artificial Dentures."

Drs. Atkinson, Perine, and Franklin were appointed a committee upon the question of appointing Dentists in the Navy and Army.

The committee on the London correspondence reported the following letter in answer:—

New Haven, Ct., August 8th, 1861.

Messrs. White, Rymer, and Hockley, College of Dentists, London.

Gentlemen:—The undersigned, a Committee of the American Dental Convention, appointed to reply to your letter addressed to this body, beg leave respectfully to say, that the fraternal and cordial spirit of your communication has afforded the Convention the most sincere pleasure, and inspired its members with renewed, and, if possible, higher regard for the professional brethren in England.

The Committee are requested to return grateful thanks for the very kind manner in which you have been pleased to tender a welcome to American Dentists at the proposed General Convention in 1862, and will be happy to make such response as the circumstances of the future shall allow.

With the highest esteem, gentlemen, for yourselves personally, and for the distinguished body you represent, we have the honor to subscribe ourselves very faithfully and gratefully yours,

(Signed) T. L. Buckingham,
Chairman Committee Am. Dental Association.

On motion of Dr. Franklin, it was

Resolved, That the officers of the American Dental Convention extend a cordial invitation to the Dentists throughout the United States, to attend the World's Dental Convention, to be held in London, in 1862,

On motion, adjourned to Friday at 9 A. M.

FOURTH DAY—MORNING SESSION.

The President called the Convention to order at nine o'clock, the usual half-hour being devoted to the consideration of inventions.

Dr. Hill spoke of the advantage of the material known as "Hill's Stopping," and thought no dentist could afford to be without it, as it was invaluable as a temporary filling; and had so perfected it, that it was impermeable and water-tight; also showed the method of properly introducing it.

Dr. Asay presented his method of attaching teeth to metallic plates by means of hard rubber.

Dr. Searle presented an approved mode of recording dental operations·

The committee on "Appointing Dentists in the Army and Navy" reported, that the subject appeared to them of so much importance that it was necessary that more time should be given to consider it than the present session would admit of.

On motion of Dr. Roberts, the committee was continued with discretionary powers, and Drs. J. D. White and I. J. Wetherbee were added to the committee.

The next subject in order was taken up, being "The various plastic materials for filling teeth: their relative or individual merits."

Dr. White referred to the article published in the August number of the Dental Cosmos for 1861, upon the oxychloride of zinc, as the merits of the material were honestly, though modestly enumerated. He was, at first, opposed to the use of these materials, but Dr. Metcalf had sent to him a small quantity, which he had used. In the first case, the filling, after being in eighteen months, continued sound, there being no permeation, shrinking, or cracking; in another case, where a tooth had been filled with gold without arresting decay, the oxychloride was introduced, and the patient thought the tooth felt more comfortable, and the decay did not continue. Whenever a tooth can be filled with gold successfully, will always use it to the exclusion of other materials. A time was, when every one was disgraced who touched any thing but gold, because so many had been deceived, both patients and practitioners; and he was glad that time had passed, and that there was now a disposition on the part of the profession to give all materials a fair trial. When some professor of chemistry said the oxychloride would destroy the enamel and the dentine, he took a tooth and filled it, and on examining it a month afterward, found there was not the slightest change in the dentine upon the walls of the cavity.

Dr. Wetherbee said, his faith was not as large as Dr. White's, for the material had received with him a severe blow, and justice to the profession required him to present the serious objections to its use. He referred to a case, where a dentist had introduced it in five teeth of fair quality, stating that it was better than gold, as this would not expand or contract as gold would do, on taking hot or cold articles in the mouth. After it had been in the teeth six months, he saw the case, and found three of the fillings were out, and one nearly so, while the teeth were sensitive; the decay being quite deep. The remaining one was left in, and at the end of three months it came out, leaving the cavity three times the original size. He assured the lady the material should never have been introduced, and was satisfied the osteoplastic had affected the dentine; he subsequently filled the teeth with gold. The article could not be made so that it would not absorb water, end therefore defied any one to make a water-tight filling; and had repeatedly reddened litmus-paper, and even the writing-paper in which it was rolled was discolored from its acid.

Dr. Metcalf asked Dr. W. to what substance in the material he attributed the effect upon the dentine?

Dr. Wetherbee replied, he thought it due to the *oxide of zinc.*

Dr. Metcalf said that, so far as his knowledge of chemistry went, oxide of zinc exerted no action upon the dental structures; about the chloride he was not so positive, but when these were combined, as in the oxychloride, the mixture was perfectly harmless. This was also the view of Prof. Silliman, to whom he had applied when first manufacturing the article. If it was properly made, it would not absorb water; and though he did not consider it would take the place of gold, thought, in some cases, it would be of use. The practice of a dentist should be "eclectic," as what may be invaluable in one case, may be useless in another.

Dr. Whitney asked Prof. Barker for some light upon the chemistry of these substances.

Prof. Barker replied, that whatever of knowledge he possessed on the subject was theoretical more than practical. From the mode of manufacture given in the Dental Cosmos, he should doubt very much such a thorough combination of the oxide and chloride in the manner of preparation indicated, as would entitle the substance to the name "oxychloride." The oxide of zinc is perfectly inert, and would not be injurious as a filling. The chloride is an active agent, zinc hardly neutralizing the chloride more than did hydrogen. Chloride of zinc is the material used as a soldering fluid by braziers, to dissolve the scale of oxide and render the metal bright for the union of the solder. Judging from its active properties, he thought its action would be decidedly injurious to teeth. From Dr. Wetherbee's statement, that the osteoplastic had an acid reaction, he inferred that the mixture was not made in just the proportions to insure no excess of its components.

Dr. White said, he was probably the first in this country to use chloride of zinc. He placed a tooth in a solution of chloride of zinc for three years, and he thought it was rather improved when it came out, though it was sound enough before. If the chloride removes the animal matter, this is what we want to get at. He used to be told that sugar was bad for the teeth, but since he grew older he had seen its falsity, and even had incorporated it in a dentrifice, for the sake of its grit.

Prof. Barker stated that in justice to Dr. Metcalf he ought to state that oxychloride of zinc, if properly made, would not, in his opinion injure the teeth. He said that he supposed the action of sugar was due to its fermentation, whereby it became converted into acetic acid, which would act on the lime salts of the bone. The relative hardness of enamel, dentine, cementum, etc., would cause the action of corrosive agents to vary immensely.

Dr. Mallett entered his protest against its use.

Dr. Stephens thought it useful, if it would save teeth that could not otherwise be saved; but too much should not be claimed for it; too many in the community held it up as better than gold filling. Dr. Metcalf was too honest to offer any article which was not in his hands valuable.

Dr. Smith, of New Haven, uses it when he thinks he can save a tooth with it that could not be filled with gold. He considered Dr. Metcalf's preparation the best one, and had used it with good results.

Dr. Roberts believed it to be of value where teeth were exceedingly frail, not of course equal to gold, but its advantage was that it could be introduced where gold could not. It was the duty of the dentist to use what was the best material for the individual case, and his judgment must determine that. He related a case in his own mouth, where a gold filling was unsuccessful, and a bone filling subsequently introduced perfectly preserved the tooth.

Dr. Hayes asked Prof. Barker if a decomposition could not take place between the oxychloride of zinc and the phosphate of lime in the teeth.

Prof. Barker replied that we have no evidence that such a change did occur. But even if it did, the interchange of elements would break up the arrangement, and so disintegrate the tooth.

Dr. Buckingham had experimented with the different plastic materials, and found them composed of nearly the same chemical constituents. The great difficulty in manufacturing it was to obtain a uniform result, sometimes producing a substance as hard as a stone, and in others it would fail to harden, owing to impurities in the oxide of zinc; again, if the chloride be in excess it will be constantly tasted, the animal matter of the tooth will be destroyed, and the filling will fail. The fluids of the mouth vary, and in some cases will be acted upon more than others. He, therefore, in view of these objections, preferred to use some other material, though he would take issue with Dr. Wetherbee as to his objections, which might as well be urged against arsenic and numberless other articles of the U. S. Pharmacopœia; indeed the objection had been urged to arsenic being placed there because its indiscriminate use would be disadvantageous. He had used the oxychloride as a temporary filling to remove the sensitiveness of dentine, with good results, leaving it in from one day to two weeks.

The next subject was then taken up, being "Hæmorrhage after Extracting Teeth, and its Treatment."

Dr. Burras considered compression by a dry sponge the best method of stopping hæmorrhage after extracting teeth.

Dr. Whitney had a bad case of bleeding from the extraction of a molar tooth. He made a wad of the silk nap from his hat, and arrested the flow of blood by crowding it into the cavity. He once extracted a molar for a young lady. On her return it commenced bleeding. He was sent for and found an artery severed. Simple, continued pressure with the finger stopped the bleeding.

Dr. Barker said, the first important thing was to turn out the clot of blood after extraction, before any styptic should be applied. He recommended Monsel's salt, the persulphate of iron, as the best styptic he knew.

Dr. Burras considered the results of Dr. Whitney due only to simple pressure. He related a case of severe bleeding for some hours, which he stopped by simply changing the patient's position. He found the person lying on the side, and simply ordered, in a cheerful way, a little wine and water, and a period of sitting up in the chair. But for ordinary use, the dry sponge, which expands when wet, is best.

Dr. Hill had always succeeded with mechanical pressure. He sometimes used styptics, as alum, cobwebs, etc. But he felt obliged to Dr. Burras for his other idea, and that was the moral effect in saying so pleasantly, "give a little wine and water," etc. He thought much was gained by cheerfulness.

Dr. Woolworth (New Haven) said, he was a student under the distinguished Dr. Muzzey, who recommended seizing the socket between the thumb and finger; he soon got a pressure which stopped the bleeding. It was often the practice to hitch a horse's head up high to stop bleeding at the mouth.

Dr. Wetherbee used a plug of cotton to fill the cavity. He dipped it into creosote, pressed out the excess, and then touched it in strong nitric acid. When pressed into the tooth the bleeding stopped in less than two minutes.

Dr. Asay had used pressure along with nitric acid diluted.

Dr. Roberts thought dentists would get along easy enough if they only enlightened their patients properly on the subject. Any patient may stop bleeding by applying the pressure himself. It often becomes bad in the end, when at first it was so small it could be easily stopped. He had used styptics, but considered pressure much better.

On miscellaneous subjects relating to surgical dentistry, Dr. Franklin read an amusing poetical paper, on the advantages of artificial dentures after the failure of operations to save the teeth.

Dr. White, in answer to a question, said he had never met with a case of discoloration which he thought due to the use of arsenic; and did not fear to use it in cases of sensitive dentine. At one time, he would admit, his mind was trammelled with theory, but that time had passed by. He was free to confess he could not get along without using arsenic, and did not see how others could do so. The various theories that had been introduced failed to account for the sensitiveness of dentine, but thought it due to the presence of nerve fibres in the tubuli. For twenty years he had been practicing where the use of arsenious acid was condemned for destroying sensitiveness; uses it dry (after having been thoroughly triturated in a mortar) in the cavity, keeping it in with cotton or wax. The delicate nerves which have been seen by Mr. Tomes, and by him described, are destroyed, but the bones are not acted upon. True, he might sometimes kill a pulp, but would say that he saved a great many that otherwise would have died. In the approximal cavities of front teeth does not use it, but uses creosote or chloride of zinc—never uses creosote and arsenic together.

Dr. Atkinson said that when dry arsenic is put in a cavity, it will become a solution by the affinity which exists between it and some of the chemical equivalents of the tooth. He thought, from his own investigations, and also from those of others, that no nerve fibres could be found in the tubuli. Sharp, quick cuts with an excavator will often relieve the sensitiveness, though he uses undissolved iodine, and sometimes a covering of Hill's stopping. Referred to the importance of having pure creosote, a good test for which is olive oil, dissolving without leaving a precipitate, and said he never filled a cavity without first having wiped it out with creosote.

Dr. Butler said, after using arsenic, either for destroying a pulp or for sensitive dentine, always uses a solution of iodine, leaving it in the tooth for a few hours. The fluids of the mouth will remove the discoloration, the iodine will also relieve the irritation, and neutralize the effect of the arsenic.

Adjourned to meet at three o'clock.

FOURTH DAY—AFTERNOON SESSION.

At the appointed hour the Convention came to order.

The next subject in the order of business was taken up, "Surgical preparation of the mouth for Artificial Dentures; should the roots of broken and decayed teeth always be removed?"

Dr. Butler instanced several cases where he would not extract roots of broken front teeth, but preferred to fill and leave them, that the natural expression of the face might be preserved, and absorption be prevented.

Dr. Roberts (New York) thought the question might equally be answered by yes and no, and thought the word "always" should have been stricken from the question. Dentists could not have like results always, for things could not always be done as they would like to do them. He always extracted all the teeth for the insertion of a full set in the upper jaw. There may be cases arise where it is best to leave in a root. If there be a single tooth, the root of which is firm and will stand filling, it would be better to put a pivot tooth there. He had a case where the circumstances required him to place a plate over the roots, being unable to persuade the gentleman to have them removed. The molars on one side of the upper jaw remained, but those on the opposite side were gone. The teeth and roots left were sound. The patient wanted the new set made without extracting these roots. He made a platina plate, spliced out the bicuspids on both sides, and made the plate fit over the fangs.

Dr. Atkinson said experience was the best teacher, and his own had taught him that if he wishes to retain the natural expression of the mouth, the fangs had better be left, if they are perfect down to the edge of the alveolar process. The points of insertion of the muscles are also retained, which is of great importance. When nature in her efforts pushes out these fangs, he cuts them off even with the process; they were also valuable in equalizing the pressure of the artificial plate.

Dr. Sutton (Greenport L. I.) said, he could conceive cases where it might be impossible to let healthy fangs ever remain. There were cases also where the gum was so formed as to be much exposed, where a better appearance might be obtained by allowing the fang to remain.

Dr. Roberts said, he thought no root could be shut up tight under an atmospheric plate, so but what the saliva would penetrate to it and inflame the periosteum. Putting a plate over a fang would project the teeth forward so as to injure the appearance more than if it was removed.

Dr. Hayes related a case where he left two roots in the superior arch —the patient refusing to have them removed—over which he placed a set of teeth; it had been worn for twelve years successfully, and he kept cutting them off from time to time.

The next question, "When shall we insert Pivot Teeth?" was passed over, Dr. Franklin only stating it should be done when we have a perfectly sound root, and the operation can be performed satisfactorily.

The next subject, "the relative merits of the various materials used as a base for artificial dentures, and the method of mounting them," was taken up for discussion.

Dr. Whitney said his experience had been formed by many years' use of silver, gold, continuous gum, and vulcanite work. Of all these he preferred the last named, thinking it superior to any thing else. If the impression is perfect, we could be sure of a fit in every instance. The twang which was so much of an objection in other materials, was in this obviated, besides, the cost was not so much to the patient, and it yielded as large a profit as other work to the dentist.

Dr. Parmele said he had worn the rubber work, and it produced in his mouth a nasty, sour, and sickening effect; the same experience was produced in the mouth of one of his own patients. He did not consider vulcanite to be equal to either gold or silver—indeed thought it valueless.

Dr. Roberts concluded, that if all were constituted exactly alike, then Dr. Whitney's statement would be true, that rubber was the best thing to use. The dentist should always try to do the best thing for his patients. He thought that when properly made, nothing was equal to continuous gum on platina. Gold was very useful, and so was rubber, but continuous gum was the best thing he could make.

Dr. Mallett said, he had been the first to experiment with rubber for artificial dentures in the United States, having perfected it and used it for the last six years. This was a year before Dr. Putnam, of New York, began, and he, therefore, had no claim to the invention. He also referred to the claims of other "so-called inventors." The longer he used the vulcanite work the better he was pleased with it, and this was also the testimony of his patients, many of whom had worn other materials.

Dr. Hill corroborated the facts in reference to the first use of rubber work by Dr. Mallett, he having seen many of the experiments of that gentleman. He believed it to be a very valuable article, but thinks continuous gum-work the most beautiful and the nearest to perfection.

Dr. Buckingham said, that Dr. T. W. Evans, of Paris, claimed to have been the first to vulcanize rubber plates, and to have manufactured the first set of teeth for Mr. C. Goodyear.

Dr. Allen, at the request of the Convention, gave at some length his method of manipulating; presenting many valuable and interesting hints necessary to success with the continuous gum, and closed his remarks by stating his reasons for a preference to continuous gum-work; his confidence increased the longer he used it, and had no difficulty in obtaining perfect fits.

Dr. Franklin said, the relative value of different kinds of work can only be determined by the amount of good that can be accomplished. His own preference was for vulcanite, and time had proven its purity and indestructibility. The vulcanite work had the same difficulties to contend with in the beginning that continuous gum-work had, viz., from the worthless gum palmed off on the profession and public, and the ignorance of the proper vulcanization. The object of many was to vulcanize in too short time, which, at the high heat necessary, would spoil the gum. Thought the adaptation of plates excelled all others, though care was necessary to attain perfect results.

Dr. White said, not having had time to experiment with it himself, he had concluded to wait until the article had been perfected, but for the last two or three years had thought favorably of it. The great difficulty, in all these materials, is, that the inventors claim too much for them.

Dr. Atkinson said, we all have a prejudice against new things, but that the statistics of success could be the only sure guide to determine which was the best; therefore, as these cannot be obtained, we shall still be in the dark. For entire dentures, he considered the continuous gum on a platina base unparalleled. In the vast majority of cases, vulcanite, its price considered, stands unparalleled. For under sets, he thought nothing so good as rubber. For upper partial sets, he preferred gold. For entire sets, with "plumpers," as they are termed, he preferred continuous gum, and next rubber.

Dr. Allen said, platina plates, after being struck up, should be placed in acid before being subjected to the heat. If this is not done the foreign metals, which have incorporated themselves in the platina, will give it a rough and dark appearance.

Dr. Searle referred to an interesting case, where he could get no adhesion of the plate to the roof of the mouth. Succeeded in so doing by fitting an oiled silk valve to the air chamber.

Miscellaneous subjects being taken up, a discussion ensued, whether the weight of a set of teeth was a disadvantage. Drs. White, Burras, Allen, and Franklin concurred in saying that it was not a drawback.

Dr. Butler referred to the importance of properly selecting teeth.

Dr. Crossett, at the request of many members, addressed the Convention. He said he came from California to receive, rather than impart instruction, and had derived benefit sufficient to repay him for coming. If agreeable he would give a short description of the progress of dentistry in his own state. When he went there the profession generally were using quartz fillings and other materials where gold should have been introduced, but now a better practice was being adopted, and all base articles were confined to their appropriate places. There exists at this time a prejudice against the use of vulcanite, and but two individuals use continuous gum-work.

On motion, a vote of thanks was tendered to Prof. Barker for the interest he had added to the session. Also to the presses of New Haven, and especially the *Journal and Courier*, which gave an interesting report of each session.

The hour (six o'clock) having arrived for which the hall was rented to other parties, the President, after a few congratulatory remarks, put the question for final adjournment, and with seeming reluctance the Convention adjourned *sine die.*

It would be unjust were we not to state that our report fails to do credit to many of the most interesting discussions of the Convention, several of which were of a conversational character, and could not be reported. The uniform attendance and interest on the part of the members, and particularly of the ladies, was deserving of great praise, and contributed much to its happy character. The place selected (New Haven) was, we think, unexceptionably the very best that could have been chosen, as the kindness received by the members of the Convention both from those of our own and other professions will attest.

POLISHING PLATES.

By George Beers, Montreal.

The importance of properly and efficiently polishing plates, and *finishing* a set of teeth, has never, in my opinion, been sufficiently considered. Many dentists think it a waste of time, but the time occupied in properly finishing a plate, is fully repaid the operator in the additional appreciation of the set by the patient, and the consciousness of the dentist, that he has faithfully performed every detail of his agreement. For though the dentist may make no verbal agreement to "polish the plate," he is *expected* to do it, as much as the artist is to finish a painting, a sculptor a sculpture, or a jeweller a piece of jewelry.

A set of teeth should be polished that it may be

> "A theme of admiration and delight"

out of the mouth as well as in it; the plate should properly reflect the image, and each lining make a minature mirror in itself.

Patients who receive an unsufficiently polished set, frequently complain of paying for "half-done work"—that is, *if* they pay at all—and their ignorance of dentistry magnifies the fault sometimes to an alarming extent. Then, if it ever requires repairing, it may be taken to another dentist, who takes the time to polish it up, and the patient pays for the repaired set, with some such exclamation as, "Why, it looks better than when I first got it!" Thus by a desire of saving a little time such saving is *lost*—the operator is upbraided by his patient, and the four corners of the globe, if the latter visits them, hear the mournfully exaggerated tale.

There are some dentists who will polish a plate for a *dental exhibition*, as well as any jeweller, but when it is for a patient, their ardent desire of finishing it is remarkably lessened. One reason for this is, that they do not get a written diploma of merit from their patient, as they would from an exhibition, nor do they expect it will be so critically examined as in the latter; but here they are sadly mistaken, for the patient gives them a diploma of *demerit*, signed and sealed by his untiring tongue, and to give more force to his arguments may produce the set, embellishing (!) it with epithets where it might have been embellished with *emery and rouge* to a much more profitable degree.

There are a few little points previous to soldering which, if followed, will conduce to a more easy finishing of the plate; first, it is advisable to have the *dies* as smooth as possible, with no unnecessary projections that would deface it; secondly, in striking it up, care should be taken of dinging its surface with sharp hammers, or uneven strokes, and no hammer used but one quite rounded on its beating surface; thirdly, care should be taken to solder the set well, flowing the solder as evenly as possible.

After the set is soldered and quite cool, it should be boiled for a few minutes in sulphuric acid and water (about ʒ i of $S.O.^3$ to ℥ v. of water) to dissolve the borax, and then it is ready for finishing. I commence by taking off and evening all superfluous solder, with the bur on my lathe; or by the use of scrapers and files I reduce it quite as well, but not so rapidly. There is nothing, however, like the bur on the lathe to trim the bottom of a lining, or the lining itself. After reducing or trimming the solder as I wish, I take a piece of the finest sand-paper, and go over every part of the plate, taking care not to rub too hard or too long. To get in the little interstices of a plate, files of various shapes are used with great advantage. Some may think this sand-papering injurious to the plate; it is, of course, if used too much, like many other things, but it is taken for granted that the readers of the *Dental Journal* are not so stupidly devoid of a little common sense or judgment, as to think I mean them to rub away till they rub through the plate. After the use of sand-paper (it must be very fine), I take a blunt, round-pointed scraper—the point something of the shape of the neck of a plain artificial incisor—and scrape evenly and easily over every part of the plate. It must not be used so as to *scale* off the metal, but so that it will smoothen and burnish at the same time. I find this very efficient to insure a good polish, and if properly and carefully done, I will guarantee as fine a finished set as can be made. The edges of the plate should now be finished off neatly with a smooth file. I now take a cork wheel made to fit my lathe—of which wheels I use two, one pointed like a pyramid, the other like a common corundum wheel, and use it over every part of the plate with pumice-stone. Wherever the cork wheel cannot get, I use a pointed piece of cork or cane with the hand, after which, I take a burnisher, and burnish every part of the plate, then follow with emery, giving the plate a thorough brushing.

Previous to using the emery, or pumice-stone, I would advise filling up all the interstices between the teeth and linings, to prevent the lodgement of food, etc., also to keep the pumice-stone or emery from getting in the spaces, which it is sometimes difficult to get out again. For this purpose some use amalgam, others gold or tin foil, and others osteo-plastic. The first takes too long to harden, and for various reasons is objectionable; the second cannot be made to stay in well without a waste of time in condensing and working it; the third has my preference, and to tell the truth, I think that's all it is good for. It hardens soon, is easily put in, and can be colored with a little rouge to the *exact* shade of the gum, if required. After thoroughly washing off the emery with soap and water, I use rouge, wet with alcohol or water. There are various powders and polishes for plate work, but of all I have tried, I find nothing to surpass good rouge. Prepared chalk, magnesia, "tripoli," and a dozen others have all been tried, but rouge still maintains its supremacy.

The above manner of polishing a plate is for gold or platinum, and in most parts for the vulcanite base also. But platinum requires a little different process for a *perfect* finish. The use of Scotch stone with pumice-stone, will smoothen platinum well. A correspondent of the *Chemical News* gives the following method of cleaning platinum. He says it may be cleaned very rapidly and perfectly by "gently rubbing upon the dirty metal a small lump of *sodium-amalgam.* This should be rubbed on with a cloth, until the whole surface is brilliantly metallic; water is then applied, which oxidizes the sodium and allows the cohesion of the mercury to assert itself. The plate is now wiped off, and the platinum surface is left in admirable condition for the burnisher." It is said that the "wetted" metal does not suffer the least trace of amalgamation, and "even when foreign metals, such as lead, tin, zinc, silver, are purposely added to the sodium-amalgam, the platinum surface suffers no disintegration."

To polish a set of vulcanite, I use the method generally recommended, viz.: with different shaped files, sand-paper, pumice-stone, emery and rouge. The use of the cork-wheel and pumice-stone on the vulcanite is a certain method of taking out the scratches of the file or sand-paper.

In finishing off *partial* sets with clasps, the latter should be filed with a "worn-out" file, inside and out, and the edge, or rims that touch the inside of the natural teeth, filed and burnished smoothly.

When finishing off a plate it is liable to accident from bending during the process of polishing, also from bristles of the brushes catching between the teeth or in the clasps, and dragging the plate out of the hand of the operator, and from various other accidents that should be guarded against. It is by no means pleasant to break a tooth or bend the plate just when it is polished, and I am sure that this will seldom occur if the operator keeps his wits about him, and be "canny," as the Scotch call it.

If a dentist can make a set to both *fit* and *look well*, he may be called a good mechanical dentist, but if he makes a set to fit well, and *not look well*, he may be called a good dentist, but he has careless taste, that has room for improvement.

WORKING IN ALUMINUM.

We find the following valuable article in the *Ironmonger* (English). The information was obtained from Messrs. Bell & Brothers, of Newcastle-on-Tyne, manufacturers of aluminum by Professor Deville's process, and will be very useful to many of our readers.

The peculiar properties of this substance having been so little understood, has hitherto hindered its general employment, but now that it is sold in a pure state at as low a rate as 50s. per pound avoirdupois, it is likely to be much more frequently used.

Aluminum is a metal of fine white color, slightly inclining to blue, especially after being well hammered when cold.

Aluminum, like silver, is susceptible of a very fine "matting," which is not affected by exposure to the air, or by any of the impurities usually present in the atmosphere of towns. To obtain this matting, the aluminum objects (being previously washed in benzole or essence of turpentine) must be plunged into a weak solution of caustic soda, thoroughly well washed, and exposed to the action of strong nitric acid. When the desired matting has been obtained, it must be well washed again, and dried in sawdust.

Aluminum is easily polished or burnished. To do this, it is necessary to use a mixture of equal parts of rum and olive oil, as an intermediate substance between it and the polishing stone or powder used. The polishing stone, steeped in this mixture, will then burnish aluminum in the same manner as gold and silver are burnished, care being taken not to press too heavily upon the burnishing instrument.

Aluminum can be beaten out, either hot or cold, to the same extent and as perfectly as gold or silver; and it is susceptable of being rolled in much the same way as either of the above metals. Leaves as thin as those used for gilding and silvering can be made of aluminum. Covered ingot moulds of iron answer best for receiving alumium intended to be used in the rolling mill. Aluminum quickly loses its temper, and therefore requires frequent reheating. The temperature of this reheating is a dull red heat, and when the plates become very thin, this demands the greatest attention.

Aluminum is easily drawn into wire. For this, the ingots are run into an open mould, so as to form a kind of quadrangular shape of a little less than half-inch section, which is then beaten upon the edges by the hammer very regularly; the operation of drawing out is then commenced on a horizontal bench, by very gradually reducing the diameter of the metal intended to be drawn into wire, and, by frequent reheating, and then the ordinary process of wire-drawing can be proceeded with. When the threads are required extremely fine—as, for example, for the manufacture of lace—the heating becomes a very delicate operation, on account of the fineness of the threads and the fusibility of the metal. The heat of the current of air issuing from the top of the glass chimney of an Argand lamp will suffice for the heating.

The elasticity of aluminum is very much the same as that of silver, and its tenacity also about the same. The moment after it has been melted, aluminum possesses about the hardness of pure silver; when it is hammered out, it almost resembles that of soft iron; it becomes elastic, acquiring at the same time considerable rigidity, and emits the sound of steel when suffered to fall upon a hard body.

A property which aluminum manifests in a high degree is that of excessive sonorousness. This property has already rendered it of service in the construction of several musical instruments.

Aluminum is much lighter than ordinary metals. Its density is 2.56, a quarter that of silver, and about a third that of iron. By the action of the hammer, the density of aluminum increases sensibly, so as to become equal to 2.67.

Aluminum melts at a higher temperature than zinc, and a lower one than silver; to melt it, an ordinary earthenware crucible must be employed, without the addition of any sort of flux.

Its low point of fusion, along with its slowness of heating, require that for melting it a less intense heat should be used, but applied for a longer time than in melting silver.

It is easily melted in an open crucible, which facilitates the removal of dust and other impurities which appear on the surface of the metal; and for the purpose of stirring the entire mass, a clean iron spatula is used.

Aluminum is easily run into metallic moulds; and, still better, for objects of a complicated form, into moulds of dry porous sand, formed so as to allow an easy passage for the air expelled by the metal, which is viscous when melted. It ought to contain a greater number of passage holes, and should be so managed as to run it in one long and perfectly cylindrical git. When heated to a red heat, it ought to be poured out with tolerable rapidity. A small portion of the fused metal should be caused to run into the git itself when full, to compensate for the contraction of the substance of the metal at the moment of solidification.

By following all these precautions, castings of the highest degree of fineness may be obtained; but, at the same time, to succeed perfectly, an especial acquaintance with the subject is needed.

In the production of work where the use of the lathe becomes necessary, any scratching or tearing of the metal by the tool is avoided by covering the surface to which the tool is applied with a varnish composed of stearic acid and essence of turpentine.

When aluminum is soiled by greasy matter, it can be cleaned by benzole; if it be soiled by dust only, india-rubber or very weak soap and water may be used.

The pieces of aluminum intended to be soldered must be prepared in the same manner as objects are treated for soldering with tin, viz., by a "tinning;" but it must be remembered that it is indispensable that this tinning must take place with the solder itself. The pieces to be soldered, thus tinned beforehand, are afterward joined together and exposed to the flame either of a gas blowpipe, or any of the ordinary sources of heat used in such cases. In order to unite the solderings, small tools of aluminum are used. These tools are used as little soldering instruments, and they facilitate at the same time the fusion of the solder and its adhesion to the previously prepared aluminum.

The use of tools of copper or brass used when soldering gold and silver, must be strictly avoided, as they would form colored alloys with the aluminum and the solder. It is of the greatest importance never to use any flux to cause the solder to melt, as all those at present known attack aluminum, and prevent the adhesion of the pieces to be soldered. The use of the little tools of aluminum is an art which the workmen must acquire by practice, in fact, at the moment of fusion the solderings must have the friction applied, as they melt suddenly in a complete manner. In soldering aluminum, it is well to have both hands free, and to use only the foot for the blowing apparatus.

Solders of different compositions and degrees of fusibility have been employed in soldering aluminum. The following are those which have been generally used, ranged according to their order of fusibility:

	1.	2.	3.	4.	5
Zinc	80	85	88	90	94
Copper	8	6	5	4	2
Aluminum	12	9	7	6	4

No. 4 is the one usually preferred, particularly for soldering smaller objects.

In order to make the solder, the copper is first melted, the necessary aluminum is added, and stirred by means of an iron spatula, unpolished, as it comes from the blacksmith, adding also a little tallow: the zinc is then added, avoiding too much heat, as this last metal is easily oxydized and is very volatile.—*Scientific American.*

EDITORIALS AND CUTTINGS.

THE AMERICAN DENTAL CONVENTION.

OF WHAT USE IS IT?

How often do we hear this question asked by dentists who have never attended one of these annual gatherings since the first one convened at Philadelphia seven years ago! It has been our lot to attend six of these seven meetings, and at first we were inclined to exclaim as others did, "Of what use is it?" But, as each year rolled by, we found ourselves as usual at the appointed place, without knowing why or how we were there. It almost seemed as if the habit of going had become incorporated in our system, and that we were unconsciously and powerfully drawn thither, whether we would or no. In taking a retrospective view of the past, we think we can see many reasons why an American Dental Convention of this nature should exist, and we fancy that much good must result from it to future generations, as well as that which has already developed itself, not only to the profession, but to the public at large. We shall proceed to give our views of what have been and what must continue to be its uses, as long as it shall be conducted, as heretofore, in a spirit of reciprocal friendliness and good feeling, and a desire on the part of all to derive from those in attendance the greatest amount of practical information, to be afterward scattered broadcast through the profession, and by its results, to the public.

And first, how much we may learn from those who have spent years of toil and thought in the accumulation of that information which they thus impart freely to all who will listen and question! Before the establishment of the American Dental Convention, the American Society of Dental Surgeons was the only recognized body in the profession, and that being a species of "Mutual Admiration Society," none but the favored few were permitted to share its benefits. Thus those who made new discoveries or improvements threw around themselves the garb of secrecy, communicating only with a few personal friends, and thus placed an extinguisher over the light which should have been allowed to cast its genial rays far and wide, brightening up the dark corners and dreary wastes of ignorance in the profession.

The American Dental Convention dispelled this gloom ; and rays of light broke forth like those of the morning sun, causing the good seed to spring up, bud, blossom and bring forth fruit in good time—until this grew annually to be the centre of attraction, where gathered together men seeking who should be first in the noble work of self-education and general enlightenment. Each brought his fund of collected knowledge, his new discoveries or inventions, or, failing these, sought, with kind words of encouragement, to aid those who came as humble seekers after knowledge, from the stores of his greater experience. Perhaps there could be given no better example of the truth of this, than the rapid strides of progress made by mechanical dentistry alone, since the establishment of this Convention.

The hall of meeting has become the dentists' annual "Fair" or "Bazaar." Here we find, year after year, the specimens of all the improvements, all the new appliances, and implements for labor-saving and time-gaining; and no one can visit the place without carrying away the knowledge of some new thing which may be made useful to him in his calling. The very interest which each takes in the other, and in his work, inspires many to make renewed efforts to add their quota to the general stock, either by themselves discovering or inventing something new and useful, or by studying to attain to higher perfection in their art. As we reflect upon the first meetings, and compare them with the later ones which we have attended, we see more clearly the especial benefits which are being derived by our friends who reside away from the cities, where all knowledge centres, and whose opportunities for obtaining a thorough knowledge of their calling are of course limited.

We have listened with sincere pleasure to the questions and remarks of these intelligent men, whose only desire was to be instructed, and we have felt glad that such questions were certain to meet with ready attention and a satisfactory reply from some quarter, and that they would result in saving much suffering and trouble to hundreds of the great world, whose pain and disease it is our province and our desire to assuage and heal. And not alone do such men go to learn; we have often listened with surprise and pleasure to their remarks, and have derived instruction as well as gratification from the history of their experience. We have learned too, that the noblest heart, the finest feelings, and the rarest acquirements, may often be found concealed beneath a rough exterior, and buried in the back-woods of the far west; and thus we have, we hope, derived a proper sentiment of humility ourselves.

But not alone have the benefits of this organization developed themselves at home; it has stretched its friendly arms across the Atlantic, and has met other recognizing hands there; it has awakened our trans-Atlantic brethren from their slumbers, and stimulated them to action, and the result has been that its glorious effects have reacted upon ourselves, in the late hearty invitation to meet our brethren of the Old World, at the great International Exhibition of 1862. At the present exciting period, when days are as years, and the thrilling events of different ages are being crowded into a lifetime, we cannot foresee what obstacles may intervene, to prevent this friendly meeting; but if the coming year should not create any such insurmountable difficulties, and it should take place, who can calculate its good results?

We cannot refrain from remarking on what we have often observed in the different localities where the meetings have been held, that we have been pleased to see the old "fogies" and "hard-shells," come out from their dark holes and mysterious corners, where they have lain dormant, heaven knows how long, saying and believing, poor innocents, that they had reached the topmost round of the ladder of knowledge, and that none could compare with them: men who would associate with none, and communicate with none; we have been pleased to see them smoked out at last, and forced to admit that it was they, and not the world, that had been standing still all this time. And the American Dental Convention has taught them the lesson which is as applicable to their profession as to any other trade or calling, that none are too old or too wise to learn. We have seen too, those who thought they knew all this little world could teach, and only attended conventions as a matter of duty, to impart rich drops of knowledge from their over-bountiful supply, to those poor ignorant creatures whom they were sent into the world to enlighten; we have felt intense gratification when we occasionally saw these learned pundits brought up with a round turn by some more modest man, who, when called upon, could teach them that there were many "stranger things in heaven and earth, than were dreamed of in their philosophy," transcendental and high-pressure as it might be. And finally, as men are social beings, and by association become more liberal in thought and deed, their minds expand, and become elevated to higher things, when they meet and associate for a time with those whom they have been educated to respect and esteem. We ourselves have felt, after these gatherings, only a sense of regret that they were so soon at an end, and that our minds were not capable of carrying away more remembrance of the many wise and good things we had heard uttered. We are sure we share this feeling with all our co-laborers, and if we have succeeded in showing some of the "uses of the American Dental Convention," we have only rendered a just return for much pleasure and much gain.

UNAVOIDABLE POSTPONEMENT OF OUR NEW THREE ACT COMEDY, ENTITLED "VULCANITE AND ITS VICTIMS."

It will be seen from the following extract from the *Vulcanite*, that the "war for the Union," the high price of soap, and "circumstances beyond our control," have combined to render a postponement of this favorite comedy, *sine die*, a necessary feature of the times.

"'The War for the Union' has absorbed the attention of the legal fraternity to such an extent as to add to the dilatory action of the courts. We had hoped, by this time, to be in possession of the decision of the judges in some one of the cases now pending against infringers of the Goodyear patents for the manufacture of the hard compounds of india-rubber and other vulcanizable gums, but we have been disappointed. Before our next issue, however, we fully expect decisions sustaining the said patents."

We had hoped that long before this we should have been able to continue the performance, so popular among our audience and so well received on its first presentation, but if our dramatic authors will not furnish the material, the subject, and the plot, how can we place the piece upon the stage correctly? We have no doubt of the good intentions of the authors aforesaid, but you see the "legal fraternity" are to blame; they will insist on being interested in the "war for the Union," and cannot find time to attend to such trivial cases as these of the A. H. R. Co. Our readers will doubtless recognize in the above extract, our old friend *Monsieur Tonson;* a little the worse for wear, but still preserving all the dignity and *aplomb* of that well-known Gallic gentleman: he looks a little older, a little more seedy perhaps, but preserves in so far as possible all his prominent personal characteristics. We are certain that our readers will recognize him under any disguise, and the present one is decidedly flimsy; he will turn up by and by that same everlasting nigger in the woodpile, "*the question settled*," and we warn our readers not to be misled by any trick or prestigiatorial display on the part of our vulcanite friend, but look him steadily in the eye and they will prevent him from pulling a large amount of figurative wool over their own optics. According to our reporter's account, and he has not been asleep lately, the new decision so ardently expected by the A. H. R. Co., will turn out, when delivered, to be only a "mouse" after all. It will settle the question in about the same manner as the Roberts case did, which succeeded to a charm, inasmuch as it frightened several thousand dollars out of the pockets of the profession. But the war times have awakened the dentists, we think, and they will not be easily alarmed again by the cry of "the question settled."

We shall continue to keep ourselves and our readers posted as to the truth or fiction of these decisions, as we have "a chiel amang them takin' notes, an' faith he'll prent 'em."

THE HIPPOPOTAMUS.

This rare and curious animal, a specimen of which is now exhibiting at Barnum's Museum in this city, possesses such peculiar interest to the dental profession, from the fact of its tusks having been among the first substances ever used for the manufacture of artificial teeth, that we need make no apology for introducing the subject into our pages, and presenting some selections in reference to it.

In the year 1850 the first specimens of the hippopotamus were exhibited at the Royal Zoölogical Garden in London, and attracted great attention as being the first ever brought into Europe alive; the one now in this city is the first ever exhibited in this country, and, with those two exceptions, the first which ever left his native clime for a civilized land, excepting those which were brought into ancient Rome. The specimen at Barnum's is only three years old, and of course not more than half its adult size; we need give no special description of it, as we presume our readers will all take an early opportunity to see it themselves, and then refer to some work on natural history, and post themselves with regard to it.

Extract from the Royal Zoölogical Society's Guide to the Gardens.

The fact of hippopotami having been on many occasions exhibited by the Emperors of Rome in the great displays of wild beasts, which were presented to the people in the Circus, was a sufficient proof that the animal could be transported from its haunts in the Nile with success. And, therefore, although 1500 years had elapsed, since the last recorded instance of this kind, the Council of the Zoölogical Society, in the year 1849, undertook with considerable confidence the operation of carrying one from Upper Egypt, all attempts to obtain it on the west coast having proved futile.

By the influence of the Hon. C. A. Murray, then H. M. Agent and Consul-General at Cairo, his Highness the Viceroy, Abbas Pasha, was induced to give orders that this object should be effected; and in the month of July in that year, a party of hunters, specially organized for the purpose, succeeded in capturing a calf of some three days old, on the island of Obaysch, in the White Nile. When found in the reedy covert to which the mother had confided him, the hippopotamus, who now weighs at least four tons, was of such small dimensions that the chief huntsman took him up in his arms to carry him to the boat from which his men had landed. Covered, however, with a coat of slime more slippery than that of any fish, the calf glided from his grasp, and struggled to regain the safe recesses of the river. Quicker than he, the hunter used the gaff-hook fastened to his spear, of the same model as that used for a like purpose at the mouth of the Nile, 3000 years before, and struck him on the side, where a scar still marks the wound, and safely held him.

From Obaysch, many hundred miles above Cairo, the hippopotamus travelled down in charge of the hunters and a company of infantry, who finally landed him at the British Agency, in the month of November, 1849.

By the obliging and liberal co-operation of the Peninsular and Oriental Company, an apparatus was constructed on board their steamer, the *Ripon*, by which the peculiar requirements of the animal were perfectly accommodated, and the result was, as anticipated, that on the 25th of May, 1850, the first living Hippopotamus, since the Palæozoic period, was landed on the English soil. A special train conveyed him to London; every station yielding up its wondering crowd to look upon the monster as he passed—fruitlessly, for they only saw the Arab keeper, who then attended him night and day, and who, for want of air, was constrained to put his head out through the roof.

The excitement created by the arrival of the hippopotamus was immense; the number of visitors to the Gardens suddenly rose from 168,895 in 1849, to 360,402 in 1850, and the population of London thus attracted to the establishment as suddenly discovered that it contained an unrivalled collection of the most interesting and instructive character, in which, if, as often happened, they failed to see the hippopotamus, they still had the rhinoceros, and a vast number of other objects to occupy them, which were scarcely, if at all, less attractive.

The hippopotamus, which thus became a household word, has continued to be a prime favorite with the public, and the arrival of his mate, the more juvenile "Adhela," in 1853, has not diminished his attraction.

Many species of hippopotamus are recognized in the fossil remains of Europe and Asia, as formerly existing in England, in France, and especially in the Sewalick Hills in India, where the researches of Dr. Falconer and Sir Proby Cautley have revealed the most extraordinary assemblage of pachydermatous and ruminant mammalia.

The hippopotamus, apart from its historic interest, both biblical and profane, has great claims on our attention. It is widely spread over the continent of Africa, wherever the rivers are of sufficient magnitude to suit its habits; in the south it even pushes out to sea along the coast, like an otter or a seal.

FROM THE LONDON DENTAL REVIEW FOR MAY.

"HIPPOPOTAMUS TEETH OR TUSKS. By THOMAS D. ROCK.—One great difficulty—happily not always insurmountable—which invariably attends the path of the technological student, is that which arises from the erroneous application of proper names, thus, the article now proposed for consideration is treated by different authors under the terms sea-horse teeth, morse teeth, and hippopotamus teeth—the first two names being applied, indiscriminately, both to the walrus and hippopotamus; although I believe that, *commercially*, the term sea-horse is restricted solely to the teeth of the latter animal.

"The word hippopotamus is compounded of two Greek nouns, *ἵππος* and *ποταμός*, and literally signifies 'the river-horse,' a name bestowed upon this singular animal by the ancients, to whom it was very probably suggested by the amphibious nature of the creature, and the striking resemblance which its profile bears to that of the equine family; more especially when seen just emerging from the surface of the water, with ears erect, the unwieldy body, at the same moment, being hidden from view.

"Visitors to the Regent's Park Gardens, where two hippopotami are to be seen constantly enjoying the pleasures of the bath, may, by careful observation, verify for themselves the appropriateness of the name thus bestowed upon this interesting mammalian.

"The Dutch Boors of South Africa distinguish this animal by the rather curious appellative of 'zee-coe,' or sea-cow.

"Hippopotami form by themselves a distinct genius of the pachydermatous, or thick-skinned animals; and even of this distinct genus there is but one living species—'*Hippopotamus amphibius*'—found exclusively in certain parts of the African continent.[*]

"The interest attaching to this animal from an economic point of view is rather limited, being confined to a local use of its skin and flesh by the African natives and colonists, and the more general application of its powerful teeth, or tusks, as a substitute for true ivory.

"However interesting it might be to consider the general anatomical and physiological features of this gigantic creature, or to trace out the resemblance thought to exist between it and the 'Behemoth,' described in the Book of Job, I propose to confine my remarks exclusively to its singular dental apparatus, and such other matters as relate immediately thereto.

"The mouth of the hippopotamus is one of the most capacious in the animal world, and is armed with a set of teeth of the most powerful description, adapted solely for cutting and bruising its food, which is of the coarsest and rankest kind, and such as is found lining the banks of the tropical rivers of Central and South Africa.

"The dental formula is as follows:—

$$\text{Incisors}\ .\ .\ \left\{\begin{array}{ll}\text{upper jaw}\ . & 4\\ & \text{—}\\ \text{lower jaw}\ . & 4\end{array}\right. \qquad \text{Canines}\ .\ .\ \left\{\frac{1\text{—}1}{1\text{—}1}\right.$$

$$\text{Molars}\ .\ .\ \left\{\frac{7\text{—}7\,\text{[†]}}{6\text{—}6}\right. = \text{38 teeth in all.}$$

"The molars evidently play but a secondary part in the economy of this animal, and a portion of them are described as 'strictly false molars;' that is, the three molars of both jaws that succeed the canines, and which are conical in form, having only one point. The posterior molars are armed with two rows of points, which gradually wear down to a trefoil surface. To man, the molars of the hippopotamus are perfectly useless.

"Incisor teeth, as the name imports, are the cutting instruments of the jaw; and of these teeth, which are situated in the fore front of the mouth, the hippopotamus possesses eight: four in the upper jaw, which are short, conical, cylindrical, and curved slightly inward; and four in the lower jaw, cylindrical, straight, pointed and projecting forward, the two centre ones especially, termed lateral incisors, which are both longer and larger than those next the canines. These incisor teeth are of some value in the arts for their ivory.

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[*] Some naturalists distinguish between the hippopotami of South and West Africa, making two species—*H. Capensis* and *H. Senegalensis*—but the difference is so small that this division is for the most part rejected.

[†] Some authorities give six molars only on the upper jaw.

"It so happens, that the teeth most highly prized by man are those that occupy the most prominent place in the dental economy of the hippopotamus: these are the canines, which may be described as 'enormous tusks,' sharpened at their points, by mutual attrition of those in the upper and lower jaw, into oblique 'chisel-like edges.' They are four in number, two in each jaw; the upper ones being short, slightly curved, rounded on the outer side, deeply furrowed in the centre on the inner side, and ridged longitudinally, more especially on that portion of the tusk which is coated with the enamel. The canines of the lower jaw are considerably larger, are very much curved, like the tusks of a boar, and in shape somewhat elliptical; they are also ridged after the same fashion as those in the upper jaw.

"Both the incisors and canines of this animal, although properly called teeth, are virtually tusks; for they are uninterrupted in their growth, are formed on cores, and consequently hollow for a considerable portion of their length.

"The canine teeth or tusks of the hippopotamus are primarily composed of the two substances known as *dentine* and *enamel:* the first named forming the principal body of the tusk, while the enamel is merely an external shield, or tooth armor, of a denser and more durable material, and described as sufficiently hard to strike fire when contused with steel.

"The enamel is not continuous throughout the entire circumference of these tusks, but only to the extent of from one-half to two-thirds of the whole, and occurs on such portions as appear to be the most exposed to injury: lengthwise, the enamel extends from end to end, and is formed anew, in conjunction with the dentine, as the tusk grows. In thickness, the enamel varies from 1-32d to 1-16th part of an inch, according to the size of the tusk. River-horse or hippopotamus teeth contain less organic matter (33.00) than either elephant ivory or the tusk of the walrus, in which substances the organic elements amount to about 44.00 and 38.00 per cent. respectively. The chemical composition of these teeth, as well as the essential difference between their dentine and enamel, is advantageously illustrated in the following analyses by Thomson:—

Hippopotamus Teeth.

Constituents.	Enamel.	Dentine.
Organic Matter	4.102	33.41
Phosphate of Lime	83.630	55.90
Fluoride of Calcium	0.850	.....
Phosphate of Magnesia	......	1.19
Carbonate of Lime	10.620	9.14
Chloride of Sodium Chloride of Potassium	0.800	0.36
Total	100.002	100.00

Sp. gr. of the dentine, 1.866.

" A mere glance at the foregoing table is sufficient to discover the more prominent qualities of the teeth now under consideration. The larger proportion of mineral matter in this dentine, coupled with great density of formation, renders it both harder and less liable to receive stains than other bone substances ; while to the smaller amount of organic matter, and the almost entire absence of oily particles, the delicate and superior whiteness of these tusks is to be attributed. It is the combination of these especial qualities, density and whiteness, that makes the hippopotamus teeth so invaluable to the dentist.

" On the other hand, the absence of oily matter, and the comparatively small amount of animal substance in this bone, induce brittleness, and cause it to be more easily affected by the acids of the food and saliva.

" The enamel is still harder and whiter than the dentine, by reason of its being composed almost exclusively of phosphate of lime, with only about 4 per cent. of organic matter. Dentists are the principal consumers of the canines of the hippopotamus ; for no bony substance has hitherto been found that possesses, to so great an extent, the properties requisite to the successful performance of their art.* Mineral teeth are, for the moment, in great favor ; but, after all, it is very questionable if any artificial substance can be made so appropriate as the precise material which an infinitely wise Being has selected, and supplied, both to man and the lower animals, for the purpose of mastication.

" When these tusks are employed for the manufacture of front teeth, the enamel on the surface is valued, and retained, for the sake of its delicate whiteness and density, as before described ; and the tusk is so manipulated that this enamel forms the outer or visible surface of the teeth. But when used in the production of artificial gum, or back teeth (molars), the enamel is removed by the aid of a chisel and grindstone, or, more frequently, by steeping the tusks or sectionsthere of in a solution of muriatic acid, sufficiently long to destroy the enamel, without affecting the dentine; the softer parts, at the same time, being coated or painted over with some fatty substance, to preserve them from injury during the operation. Sometimes the blowpipe is resorted to as a means of removing the enamel, and a fine file is afterward used in either case, for imparting the final surface to the bone. The points of the canines are generally defective, and in the process of working are first removed, the tusks being afterward sawn into transverse sections, of varying thickness, according to the destined application, and as required by the operator.

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* Many dentists in Europe still prefer to use the hippopotamus ivory to mineral teeth. In America it is entirely superseded by mineral teeth, and in our judgment they are far superior to any thing ever used.—Editor.

" Although the teeth of the hippopotamus are all but monopolized by dentists, yet the very excellent quality of their dentine is more widely appreciated, and likewise adopted for a few other purposes in the arts. When great delicacy is required, this bone is found more suitable for carvings than the ivory of the elephant, and is much used in France for this purpose, especially in the manufacture of fine brooches.

" The handles of surgical instruments are sometimes formed of this material, for which purpose it is admirably adapted, because of its being less liable to receive stains than other sorts of ivory.

" Vases made of hippopotamus tusks were displayed in the Great Exhibition of 1851; and in the Irish Exhibition, a Mr. R. Barter, of Dublin, exhibited some elegant intaglio brooches, consisting of figures carved in the same substance, and mounted on a groundwork or surface of cornelian. The enduring nature of the hippopotamus ivory appears to have been known and valued as early as the first century; for, according to a writer named Pausanias, a certain Greek statue of 'Dindymene' had its face 'formed of these teeth, instead of elephant ivory.'

" A few words on the incisor teeth of the hippopotamus received into commerce will suffice. They are not so generally imported as the canines, with the exception of the two lower, lateral, and projecting incisors, commonly called tusks in the market, as distinguished from the canines, which are usually termed teeth. These projecting incisor teeth, as already described, are long, straight, and hollow for a portion of their length, like the canines, but differing vastly in quality from the latter, being considerably softer, and more easily affected by the fluids of the mouth, so that they are seldom used by dentists. Yet these long, straight teeth have their especial application, being employed in the manufacture of the long knitting-needles and netting-meshes used by ladies, as well as for other more general purposes. The enamel on these lateral teeth appears to be confined to the projecting point, and does not extend into the jaw.

"The smaller and curved incisors of the upper jaw are comparatively valueless, except for common turnery work.

"I may here mention, that unless the teeth of the hippopotamus are employed by the dentists, the enamel is always removed, and generally by means of an acid bath, as no ordinary tool produces any effect upon it.

"As the Board of Trade returns furnish no separate account of the imports of hippopotamus teeth, I cannot give any statistical table of the extent of our trade in this article, but should roughly estimate the quantity imported at from 7 to 10 tons annually; which, considering the limited source of supply, is far from being small. The importation of these teeth into Liverpool in the year 1850 was 2½ tons; and as by far the larger quantity received enters the port of London, I think my estimate of the total is not overdrawn. The value of hippopotamus teeth depends both upon size and quality — those being the most esteemed that are large and free from flaws. In years that are past, as much as 30s. per lb. has been paid for fine tusks; but the price may now be said to range from 1s. per lb. to 17s. or 18s. per lb. At a recent sale, some very small teeth realized only 7½d. per lb.; but the following table, compiled from a sale at the end of last year, will perhaps convey to the reader a better idea of the comparative value of these tusks:—

Teeth averaging each	6 lbs.	realized	17s.	per lb.
" "	5 1-4	"	13s	"
" "	5 1-5	"	8s. 9d.	"
" "	5	"	11s.	"
" "	4 1-2	"	11s. 6d.	"
" "	4 1-5	"	14s. 3d.	"
" "	4	"	10s.	"
" "	3 3-4	"	8s. 6d.	"
" "	3 1-4	"	6s. 6d.	"
" "	3	"	3s. 7d.	"
" "	2 3-4	"	4s. 9d.	"
" "	2	"	2s. 2d.	"
" "	2	"	1s.	"
" "	1 1-2	"	1s. 1d.	"
" "	1 1-3	"	2s. 4d.	"

" Allowing 20 lbs. on an average for every set of hippopotamus teeth imported, and presuming our total imports are 10 tons, no less a number than eleven hundred of these giant creatures must be slaughtered every year to supply our markets.

" At the present time, the demand for hippopotamus teeth is small, and no scarcity is felt; but as civilization advances in West and South Africa, and the animals become gradually exterminated, it is probable that the time may come when this comparatively insignificant, though useful and valuable article of commerce, will be sought after in vain."

REMOVAL OF PAROTID AND SUB-MAXILLARY GLANDS. —TEMPORO-MAXILLARY ARTICULATION DESTROYED AND REPRODUCED.

Since issuing the last number of the *Press*, we have had a case in which a tumor, involving the parotid and sub-maxillary glands, had to be removed, and so situated that it was impossible to take it away, without either removing a portion of the lower jaw, or detaching the temporalis, masseter, pterygoideus externus and internus muscles, and destroying the temporo-maxillary joint, and bringing the upper part of the jaw forward to a sufficient extent to admit of the removal of the tumor, and afterward replace the articulating surfaces, with the view of having a reproduction of the ligaments, synovial membranes, &c. The latter method, though without precedent, was adopted.

The carotid artery being ligated, as a preliminary step, the operation was continued, by extending the incision up to a line parallel to the top of the ear, dividing, necessarily, the pes anserinus. This was absolutely necessary, in order to make room for the subsequent steps of the operation. The other soft parts were removed from the external surface of the masseter muscle, when the latter was separated from the ramus of the lower maxilla by means of a sharp bone-chisel, an instrument seldom employed by others, but one we could not dispense with in separating the soft parts from the bones in all operations involving these issues. This being effected, the parotid gland was removed from its bed by the same instrument. The temporal muscle was then detached from the coronoid process, partly with the scalpel and partly with the chisel. The temporo-mazillary joint was next destroyed with the scalpel. The upper part of the lower jaw was then brought forward, until room was made for the removal of the tumor, which was over three inches in diameter in the directions, internally and externally, having filled the fauces to such an extent that, on looking into the mouth it appeared nearly impossible for the patient to swallow or breathe, which were effected, for the last three weeks prior to the operation, with the greatest difficulty.

As stated before, that portion of the tumor embracing the parotid gland, was removed from its bed, by means of a small bone-chisel, in the following manner: The edge of the instrument was first shoved in, by the side of the tumor, as close to the temporal bone as could be. After passing it in for half an inch, a prying motion was made, by which we could readily see that a portion of the bony structure was laid bare. This method was continued in successive steps, until all the posterior and internal attachments were broken up, which left the styloid process, to its base, plainly in view. The natural attachments of the parotid gland had been, to a great extent, destroyed by the disease, from which cause the major portion of the difficulties usually attending its removal were not encountered.

As we design to report the case in full, as soon as the patient has recovered, further details of the operation will be dispensed with here. It is now seven weeks since the operation, and the patient is out of danger.

The most interesting feature connected with the whole case was, the reproduction of the soft parts concerned in the temporo-maxillary articulation. For six weeks, parts of the articulating faces of the joint could be seen, the wound being kept open, with the view of admitting the discharge of any portion of bone that might slough, which is nearly always the case, to a limited extent, where muscles, as strongly attached as those to the lower jaw, are separated. At the end of three weeks after the operation, we could discover fibrin, in the shape of the external lateral ligament, stretching from the margin of the glenoid cavity down the cervix of the condyloid process. This would break when the jaw was moved briskly, and continued breaking, for nearly a week, when, at last, the substance had become sufficiently elastic to bear the motions of opening and shutting the mouth without giving way.

The progress of the reproduction of this joint was witnessed by from twenty to thirty medical men of this city and state.

At the end of the sixth week, it was ascertained that a thin scale of bone, about one line and a half in width, was exfoliated from the posterior and upper parts of the ramus, which, being seized by the forceps, was readily withdrawn. This continued up the back part of the condyloid process to the head, from which a thin scale was likewise sent off, including the entire articulating face.

At this time, one week after the removal of this exfoliated bone, and seven from the operation, the joint is entirely reproduced, so that nothing can be seen there, excepting the red and healthy granulations covering it.

Remark.—The above is an operation that never would have been attempted by those who dread the admission of air into joints, and is one among many cases we have already published, calculated to show the utter groundlessness of the opinions of the profession, sustained from time immemorial up to the present, that atmosphere is a dangerous agent when admitted into the joints.

THE NEW ANÆSTHETIC—KEROSELENE.

We have before us a phial of liquid, colorless like water, and possessing a strong permeating smell not unlike chloroform, but with other qualties peculiar to itself. This liquid is *Keroselene*, and as it is at present attracting considerable attention in the medical world as an anæsthetic agent, we cannot do better than give our readers some account of it. Keroselene is a volatile product, arising from the final distillation of petroleum, or coal-oil; chemically it is a pure liquid hydro-carbon, its specific gravity being lighter than that of any other known liquid. The peculiar properties of this liquid were first observed in the manufacture of kerosene oil; as the men engaged in the department where the keroselene was formed, were frequently found in a partially anæsthetic condition, and similarly affected to persons under the influence of "*laughing gas*." The gentleman to whom we owe the discovery of a mode of purifying keroselene to such a point as to render it a useful anæsthetic, is Mr. Joshua Merrill, superintendent of the "Downer Kerosene Oil Co.," Boston, Mass. Mr. Merrill presented a specimen of this liquid to the "Boston Society for Medical Improvement," when, on a cursory examination, Dr. H. J. Bigelow pronounced it in his opinion "as strong at least as ether, tasteless as water, while its vapor is no way irritating. On the contrary, its flavor is agreeable, and resembles a dilute chloroform, with a whiff of coal-tar or creosote. It is also abundant and cheap (one dollar per gallon.) If this is an anæsthetic of the character it seems to be, at once effectual, agreeable, tasteless, without subsequent flavor, or odor, it will supersede ether; and it has certainly at this moment a remarkable air of promise." The new agent was then referred to the hospital surgeons for experiment, and on motion, Dr. Bigelow was requested to draw up a report of the results of their investigations. In the *New York Medical Times*, Dr. Cutler, of Woburn, Mass., related some experiments made with keroselene, which were completely successful. It had also been used externally in neuralgia. Dr. Bigelow, of Boston, afterward experimented upon himself and upon various surgical cases, and proved its anæsthetic properties, though in one or two instances there was tendency to asphyxia and convulsions. There is but little doubt, however, that when prepared pure, this will prove an invaluable anæsthetic.

JONES & WHITE.

By reference to our advertising pages it will be seen that this co-partnership has been dissolved. For the past ten or fifteen years we have been accustomed to see in our daily walks through Broadway, the signs of "Jones & White," then "Jones, White & Co.," next "Jones, White & McCurdy," then Jones & White;" until finally we see "A. Jones" at No. 710 Broadway. Through all these changes, we have, in company with the rest of our profession, found our friend Jones daily at his post, and universally the same good fellow and liberal-hearted man. We are sure that the changes intimated above have not in the least detracted from his good qualities, and we cordially recommend his acquaintance, both in a business and social capacity, to those of the profession, if such there be, who *know him not.*

WATTS'S CRYSTAL GOLD-FOIL MANUFACTURING COMPANY.

As will be seen by our advertising pages, Mr. A. J. Watts, formerly of Utica, has established the above manufactory in this city. We understand that he is using every effort to make the best article of the kind in the market, and is endeavoring by a thorough course of experiments to produce, what is so much desired by dentists, a quality of foil which shall be always uniform. We have received specimens of the results of these experiments, which we consider a superior article.

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W. B. ROBERTS,

TEETH MANUFACTORY AND DENTAL DEPOT,

649 Broadway, New York,

SUCCESSOR TO J. M. CROWELL.

Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite .Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins, ...	20 cents
do do do with holes	15 "
Single gum teeth for vulcanite or cheoplastic base work with pins	15 "
do do do plate work	15 "
Continuous gum teeth, with Roberts' one pin, ...	8 "
do do with two pins, ...	8 "
Plain teeth for vulcanite or cheoplastic base, ...	8 "
do for plate work	8 "

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor; and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as to go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Gum, per ounce, troy weight,		$2 00
Body,	do do	1 00
Platina,	do do	6 50
Etching, Enamel, per box,		1 00
Pure Gold,		1 10

Carvers or Knives for continuous gum-work, etc.

Metals and Minerals.

Gold plate 18 carats,	$0 90	per dwt.
do for clasps,	90	"
Gold solder, 18 carats,	90	"
do 16 carats,	75	"
Pure Gold,	1 10	"
Pure Silver Plate,	2 00	per oz.
Precipitate of Silver,	2 00	"
Townsend's Cement,	1 50	"
Silver Solder,	9	per dwt.
Bismuth,	1 50	per lb.
Asbestus,	38	"

Tin, lead, zinc, and all other metal at the lowest market prices

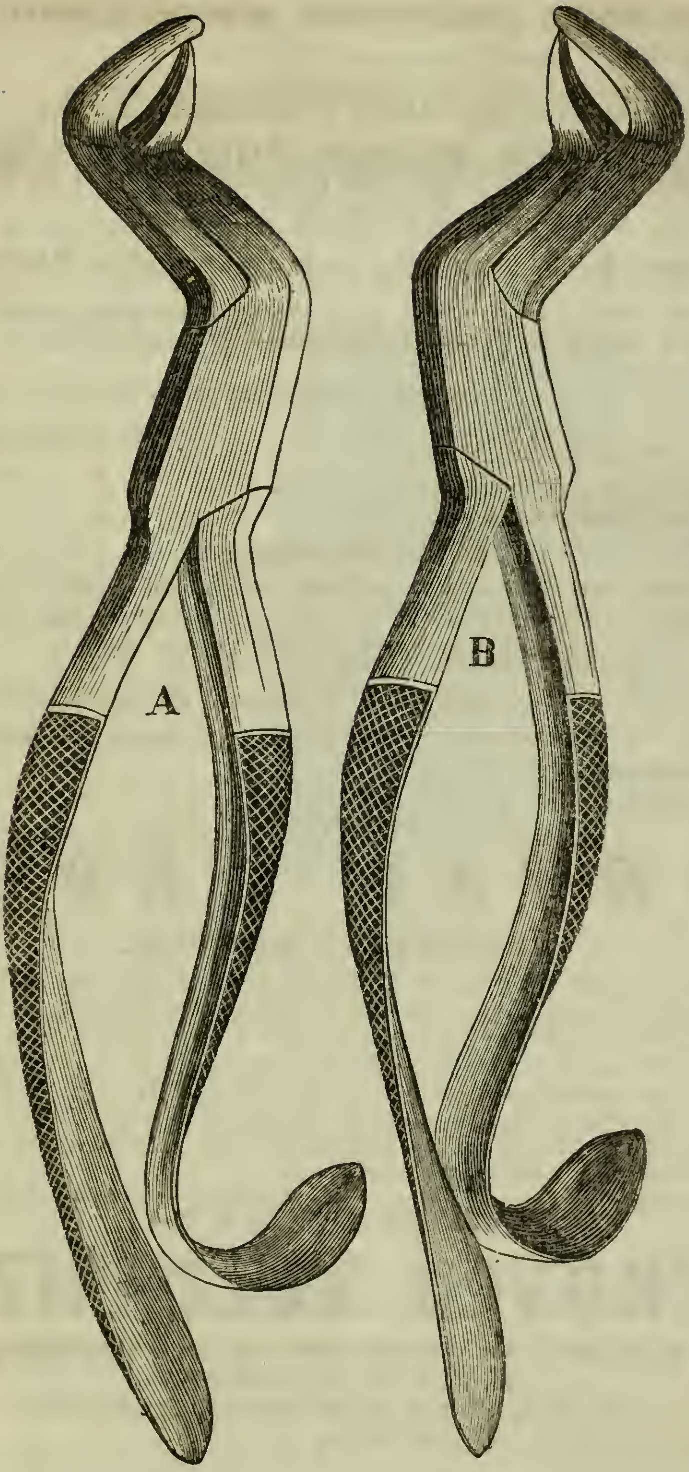
Vulcanizers.

Small size alcohol-burning machine, 2 pieces	$18 00
Large " " " 3 "	20 00
Small size gas-burning machine, 2 "	18 00
Large " " "	20 00
Adjustable set screw for Index,	1 00
Small size gas-burning self-regulator, 2 pieces,	23 00
Large do do do do	28 00
Amber Base for Vulcanite,	8 00
Rubber Base do	3 00

Furnaces.

No. 1, Large Furnace, with three muffles, $18 00. Muffles each,	
Boxing and cartage,	1 75
No. 2, Furnace, with three muffles, $16 00. Muffles each,	38
Boxing and cartage,	1 50

Dental Chairs, Rolling Mills, Roberts' Wisdom Teeth Forceps, and all kinds, of the most approved make and style. Excavators, pluggers, plate punchers, etc., etc.



The above cut represents Roberts' Improved Wisdom Teeth Forceps.
Price, per pair, - - - - - - - - $2 50
Can be had at our Dental Depot, 649 Broadway, New York.

TO THE DENTAL PROFESSION.

DR. G. DIEFFENBACH'S
IMPROVED AMBER COMPOSITION,
AND
Gum-Color Pink Vulcanite, and Best India-Rubber Gum.

Any Dentist wishing to give them a trial, by applying to me, either by mail or otherwise, will receive the necessary instructions to manipulate them, and a small piece of either Compound.

In order to induce a larger sale, and to bring them within the reach of all, I have reduced the price as follows:—

Improved Amber Compound, per lb.	$8 00
Pink Vulcanite	5 00
Best Prepared India Rubber Gum	2 50
Gutta Percha for Impressions	2 00
Dentine per oz.	3 00

Also One Dollar Packages.

Allowing 25 *per cent. commission to the Trade, and to all orders above* 5 *pounds.*

All letters of inquiry must be prepaid, and a return stamp inclosed.

GEO. DIEFFENBACH & BRO.,
No. 83 Bleecker Street, New York.

P. S.—TIME OF VULCANIZING: Amber and Pink Vulcanite, 2½ hours, at 330°; India-Rubber Gum, ¾ of an hour, at 330°.

A. JONES,
DENTAL DEPOT,
710 BROADWAY, NEW YORK.

The firm of Jones & White is dissolved, to take effect May 1st, 1861. All debts due the New York house to that date will be collected by A. Jones, at his office 710 Broadway, where he will keep constantly on hand a well selected stock of Teeth from Oram & Armstrong, (three first-class premiums received,) D. H. Porter, and S. W. Stockton. Also an entire new stock of Dental Instruments of the very best manufacture, together with every article used by the Dental profession.

A discount of ten per cent. will be made on all cash bills for Teeth amounting to $20, and like proportion on larger amounts.

WHITNEY'S
IMPROVED VULCANIZER,

THE SMALLEST, MOST PERFECT, AND CHEAPEST VULCANIZER YET OFFERED TO THE PROFESSION.

THE COVER SCREWS ON WITHOUT BOLTS OR NUTS.

For 1 Case, 1 Flask, &c., complete for use,	$12 00
" 2 " 2 " "	13 00
" 3 " 3 " "	14 00
" extra Flasks 35 cents each, or 3 for	1 00
" " Thermometer Tube and Register,	75

For sale at the Vulcanite Agency, No. 73 BLEECKER ST., NEW YORK, or by the Manufacturer, **B. T. WHITNEY, Buffalo, N. Y.**

E. A. L. ROBERTS'

DENTAL DEPOT,

56 Bond Street, New York.

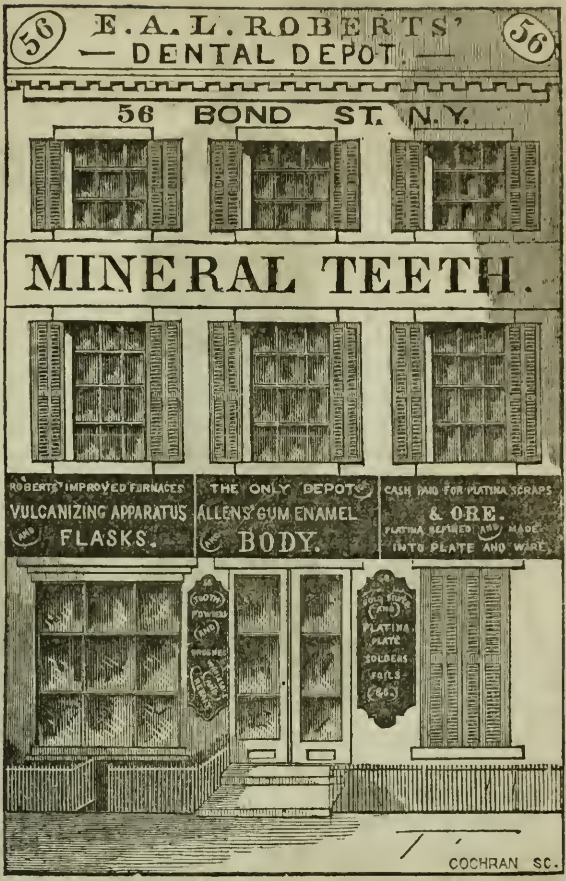
REFINER, MELTER AND WELDER

OF

PLATINA SCRAPS AND ORE.

IMPORTER AND MANUFACTURER
OF PLATINA PLATE AND WIRE;
ALSO, MANUFACTURER OF THE
MOST APPROVED FURNACES,
VULCANIZERS, AND
LATHES; DEALER IN
TEETH OF THE BEST
MANUFACTURERS,
VIZ.:—

Jones & White, Stockton,
Roberts, and Porter.



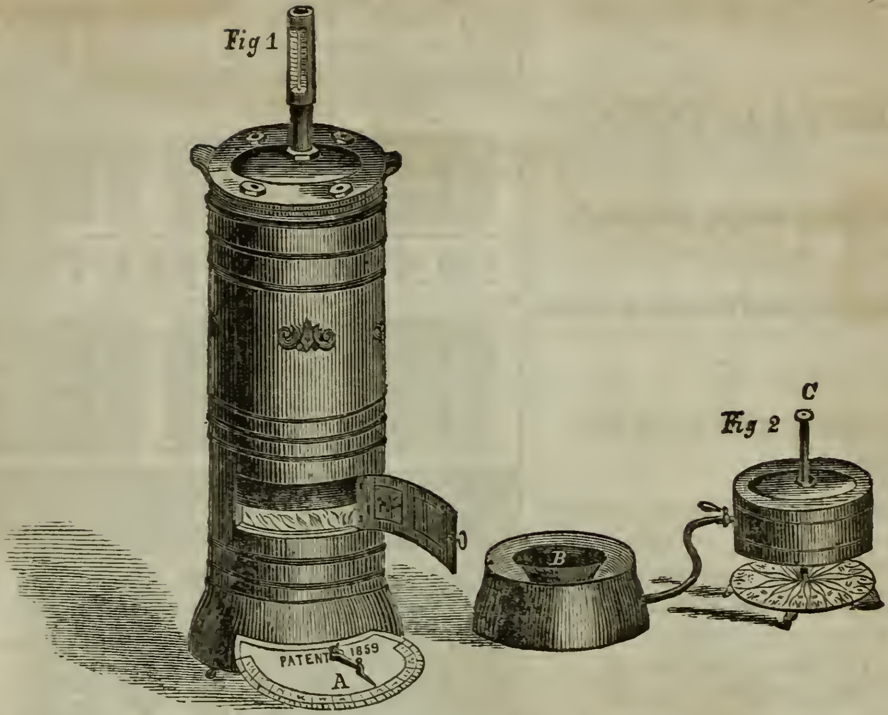
LIST OF PRICES.

Materials for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, " "	1 00
Platina, " "	6 50
Pure gold, " "	1 10

Teeth.

ROBERTS'	Gum-teeth for plate-work,	$0 15
"	Plain " "	0 8
"	Continuous gum, 1 pin,	0 8
"	" " 2 pins,	0 8
"	Blocks or sections for vulcanite base, or cheoplastic work, with pins,	0 20
"	" with holes,	0 15
"	Single gum-teeth for vulcanite work, with long pins,	0 15
"	do do with holes,	0 15
PORTER'S	Gum-teeth for plate-work,	0 16
"	Plain " "	0 8
"	Continuous gum, 2 pins,	0 8
"	Roberts' " 1 pin,	0 8
"	Gum for vulcanizing long pins,	0 16
"	Block " "	0 20



E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top; the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index, as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

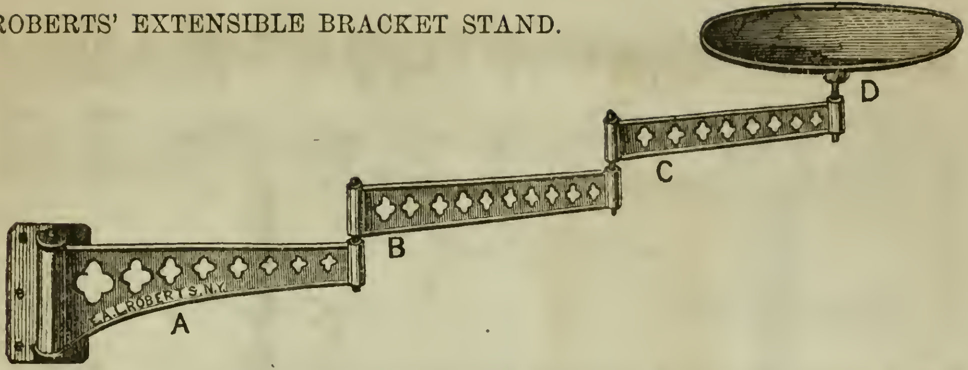
The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

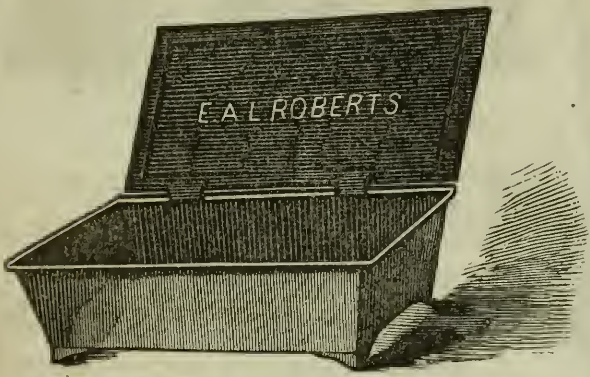
The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

ROBERTS' EXTENSIBLE BRACKET STAND.

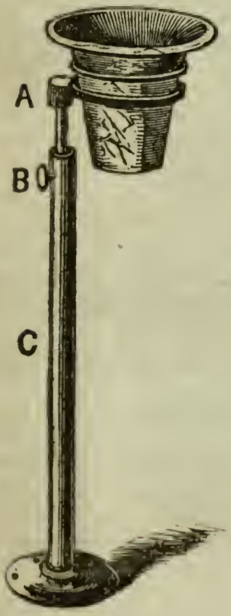


This very convenient stand is made of three segments of ornamented iron, A, B, C (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equally and firmly adjustible to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

IMPROVED MOULDING AND SAND BOX.


E.A.L.ROBERTS.

The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

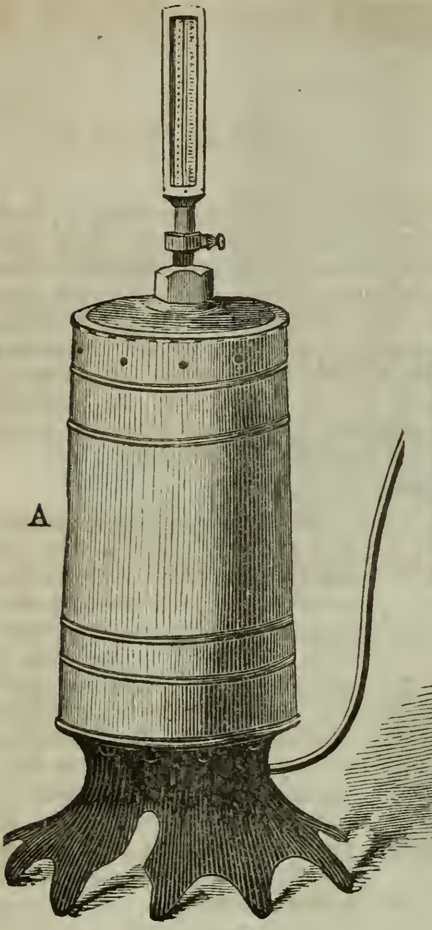
A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

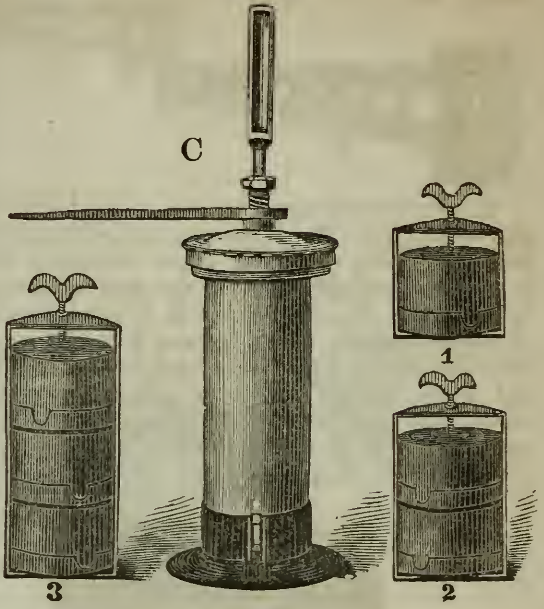
IMPROVED FLASKS, &c.

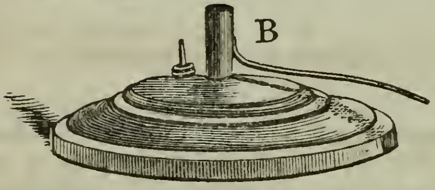
We now offer an assortment of Flasks, viz.: Hawes', Sectional, and others, moulding rings of all sizes and styles, melting ladles with adjustable handles—an improvement of our own—with a full assortment of furnace and melting tongs.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.







PRICES.

No. 3, large size	$12.00
" 2, second "	10.00
" 1, small "	8.00
Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.50
Brass cylinders instead of sheet iron extra	1.25

These machines are the most compact, light, and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal, dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2, second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

The cover of each machine has a plug of fusible metal screwed into it, which fuses and allows the steam to escape before the pressure reaches one hundred and twenty pounds. This machine, for simplicity, safety and economy, is superior to all others, requiring less than half a pint of alcohol, or if gas is used, one fourth of a burner of ordinary size, to vulcanize.

PATENT VULCANITE

DENTAL AGENCY,

NO. 640 BROADWAY,

[Entrance on Bleecker Street], NEW YORK.

This Agency is established for the sale of Office-Rights, Apparatus, and Materials used for the Goodyear Patent.

VULCANITE BASE FOR ARTIFICIAL TEETH.

Hereafter, prices of **Rights, Apparatus,** and **Materials,** will be as follows, viz. :—

For an OFFICE-RIGHT, *without tariff*,	$100 00
" " Improved GAS and ALCOHOL HEATER,	$16, $20, 5 00
" Best prepared GUM, per lb.,	3 00
" Improved FLASKS, each,	35
" Sheet GUTTA PERCHA, for impressions, per lb.,	2 00
" PACKING INSTRUMENTS and SCRAPERS, per doz.,	2 00

Other TOOLS and MATERIALS at reasonable prices.

Those wishing their work Vulcanized at the Agency, can depend upon our

Promptness, Fidelity, and Reasonable Charges.

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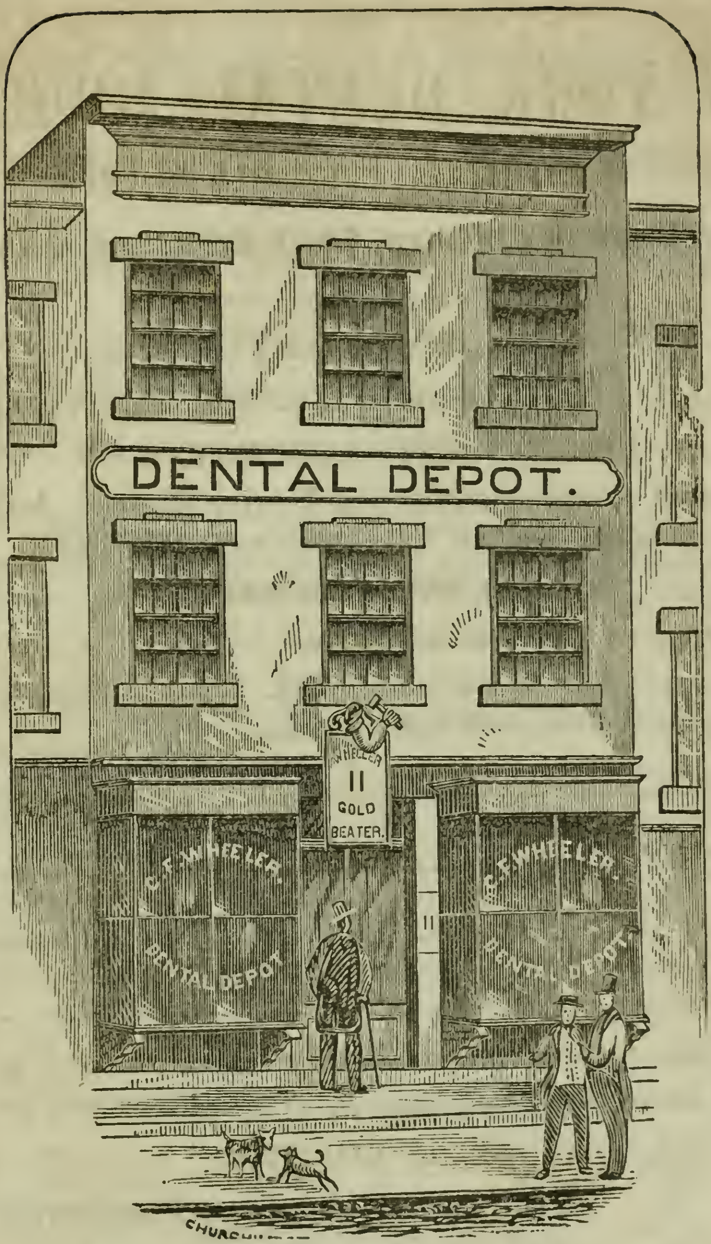

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